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POLLUTION OF THE INTERSTATE WATERS OF THE COOSA RIVER AND ITS TRIBUTARIES, GEORGIA-ALABAMA. PROCEEDINGS OF CONFERENCE, SESSION (2nd) HELD AT ROME, GEORGIA ON APRIL 11, 1968

Federal Water Pollution Control Administration
Washington, D. C.

11 April 1968

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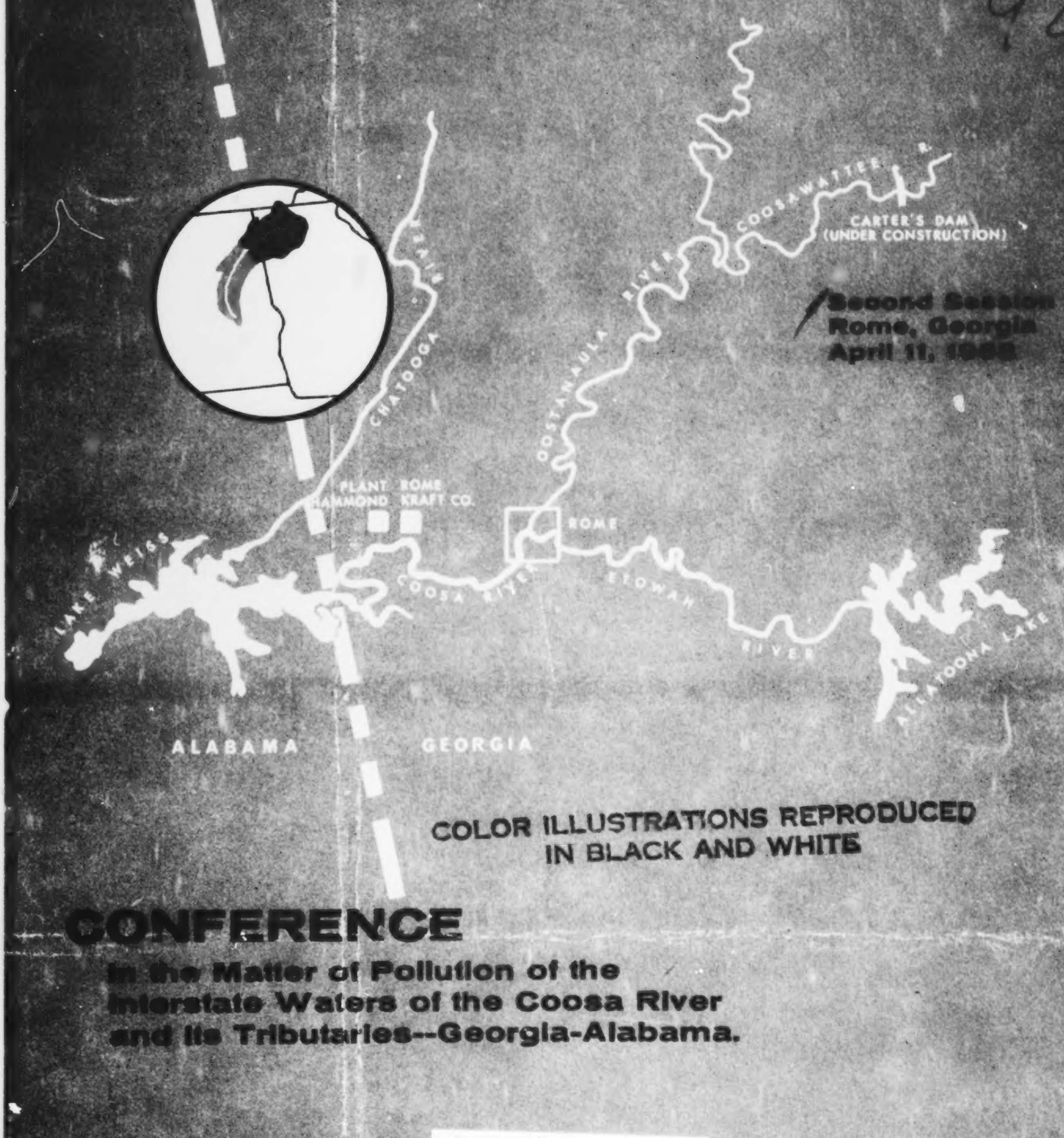
PROCEEDINGS



CHATOOGA R.
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COOSAWATTEE R.
CARTER'S DAM (UNDER CONSTRUCTION)
PLANT HAMMOND
ROME KRAFT CO.
ROME
LAKE WEISS
COOSA RIVER
ETOWAH RIVER
ALLATOONA LAKE
ALABAMA
GEORGIA

Second Session
Rome, Georgia
April 11, 1968

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CONFERENCE

In the Matter of Pollution of the Interstate Waters of the Coosa River and its Tributaries--Georgia-Alabama.

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FEDERAL WATER POLLUTION CONTROL ADMINISTRATION

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In re:

ENFORCEMENT CONFERENCE

ON POLLUTION OF THE

COOSA RIVER

- - - - - - - - - - - - - - - - -X

Civic Center
Rome, Georgia
Thursday, April 11, 1968

Conference in the above entitled matter was convened pursuant to notice, at 9:00 a.m.

PRESIDING:

MURRAY STEIN, Assistant Commissioner
for Enforcement
Federal Water Pollution Control Administration
Department of the Interior
Washington, D. C.

CONFEREES:

JOSEPH L. CROCKETT, JR., Director,
Technical Staff
Alabama Water Improvement Commission
Montgomery, Alabama

R. S. HOWARD, JR., Executive Secretary
Georgia Water Quality Control Board
Atlanta, Georgia

JOHN R. THOMAN, Regional Director,
Southeast Region
Federal Water Pollution Control
Administration
Department of the Interior
Atlanta, Georgia

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THOSE IN ATTENDANCE:

F. M. Albrecht
Consultant
Georgia Power Company
Atlanta, Georgia

C. F. Angle
Supt. Water and Waste Control
Celanese Corporation
Rome, Georgia

Carl Barrett
Mayor of Holly Springs
Holly Springs, Georgia

J. P. Baskin
J. P. Baskin and Associates
Rome, Georgia

Herbert F. Berger
Regional Engineer
National Council of Air and Stream Improvement
Gainesville, Florida

Kenneth C. Bird
Regional Economist
Federal Power Commission
Atlanta, Georgia

John M. Bolton
Assistant Director - Tech. Staff
Alabama Water Improvement Commission
Montgomery, Alabama

M. J. Brown
Pulp Mill Supt.
Georgia Kraft Company
Rome, Georgia

Giles Cameron
Tax Assessor
City of LaFayette
LaFayette, Georgia

Howard W. Chapman
Associate Regional Health Director
DHEW - PHS Region 4
Atlanta, Georgia

Mrs. Earl W. Clark
Izaak Walton League
Birmingham, Alabama

J. David Clem
Regional Program Chief
Water Supply and Sea Resources
U. S. PHS
Atlanta, Georgia

Carl Collins
Executive Vice President
Rome Area Chamber of Commerce
Rome, Georgia

R. W. Cozzens
District Representative
Nalco Chemical Company
Chicago, Ill.

Laurence W. Dabney
Executive Engineer
Laurence W. Dabney and Associates
Atlanta, Georgia

Carl B. Dalton
Community Relation Manager
Georgia Kraft Company
Rome, Georgia

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Information Office
Georgia Water Quality Control Board
Atlanta, Georgia

Doyle F. Dykes
Division Manager
Georgia Kraft Company
Rome, Georgia

John G. Farley Jr.
Senior Engineer - Water and Air Resources
Alabama Power Company
Birmingham, Alabama

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Gulf States Paper
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Partner, Wiedeman
and Singleton, Engineers
Atlanta, Georgia

Warren O. Griffin
Asst. to Executive
Secretary
Georgia Water Quality
Control Board
Atlanta, Georgia

Bruce Hamler
City Manager
City of Rome
Rome, Georgia

K. C. Hopkins
Mech. Supt.
West Point-Pepperell
Lindale, Georgia

H. D. Kelly
Fishery Biologist
Alabama Department Conservation
Talladega, Alabama

Peter A. Krenkel
Professor
Vanderbilt University, Nashville, Tenn.

P. E. Lacouture
Smith and Schnacke,
Dayton, Ohio

J. Leonard Ledbetter
Director, Water Quality
Surveys Service
Georgia Water Quality Control Board
Atlanta, Georgia

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Hydraulic Engineer
Resources Advisory Board
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D. N. MacLamore, Jr.
Asst. Chief Civil Engineer
Georgia Power Company
Atlanta, Georgia

Mrs. Alan Mather
Water Resources Chairman
League of Women Voters of Georgia
Atlanta, Georgia

Malcolm N. May
V. P. Paper Products
Gulf States Paper Corporation
Tuscaloosa, Alabama

V. A. Minch
Associate Director Corp Tech Service
The Mead Corporation
Chillicothe, Ohio

Dick McCullough
Clerk, Floyd County
Rome, Georgia

E. V. McSwiney
Executive Vice President and General
Manager
Georgia Kraft Company
Rome, Georgia

Howard A. Neubauer
Kimberly-Clark Corporation
Coosa Pine, Alabama

James S. Owen
City Supt.
City of Calhoun
Calhoun, Georgia

Mathew M. Payne
Chairman Rome - Floyd County
Development Authority
Rome, Georgia

Otha F. Powell
Georgia Kraft Company - Krannert Div.
Rome, Georgia

THOSE IN ATTENDANCE (CONTINUED)

J. Moran Roberts
Robert and Company Associates
Atlanta, Georgia

Herbert H. Rogers
Corps of Engineers
Atlanta, Georgia

Jack Rogers
Attorney
Rome, Georgia

McDewain Saudlin
Georgia Kraft Company
Rome, Georgia

A. D. Searcy
Soil Conservation Service USDA
Athens, Georgia

C. Wayne Smith
Inland Container Corporation
Rome, Georgia

R. H. Smith
Celanese Fibers Company
Rome, Georgia

W. Eugene Smith
THE ATLANTA JOURNAL
Atlanta, Georgia

Gordon L. Sullivan
The National City Bank
Rome, Georgia

Joel Sulzbacher, Jr.
May Realty Company
Rome, Georgia

Robert L. Sutton, Jr.
Hensley-Schmidt Inc.
Marietta, Georgia

Mrs. J. P. Tillinghast
League of Women Voters
Atlanta, Georgia

Bobby J. Toles
Bobby J. Toles, Architect
Rome, Georgia

James C. Trussell
Georgia Kraft Company
Rome, Georgia

Billy G. Turner
Georgia Kraft Company
Rome, Georgia

J. Thad Watters
Retired
Rome, Georgia

Charles L. Williams
Chairman, County Commission
Floyd County
Rome, Georgia

W. B. Williams
Georgia Water Quality Control Board
Atlanta, Georgia

Sid Willingham
Willingham-Nelms Insurance Agency
Rome, Georgia

Jim Wyatt
Rome-Floyd County Development
Authority
Rome, Georgia

CONFERENCE SESSION

COOSA RIVER ENFORCEMENT CONFERENCE

Federal Water Pollution Control Administration

Rome Civic Center Rome, Georgia

April 11, 1968

- - -

The second session of the Conference on Interstate Pollution of the Coosa River convened Thursday morning, April 11, 1968, and was called to order at 9:00 o'clock a.m. by Mr. Murray Stein.

MR. MURRAY STEIN: The conference is open. This second session of the conference in the matter of pollution of the interstate waters of the Coosa River is being held under the provisions of Section 10 of the Federal Water Pollution Control Act, as amended.

The first session of the conference was held on August 27, 1963. At this session, the conferees agreed to conclusions and recommendations for remedial action, and I would like to insert that summary of the conference containing those conclusions and recommendations. Without objection, that will be entered in the record at this point.

(Following is a complete summary of the first session of the conference, which was held on August 27, 1963, and letter from the Department of Health, Education, and Welfare.)

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SUMMARY OF CONFERENCE

POLLUTION OF INTERSTATE WATERS

# of the

COOSA RIVER SYSTEM

(GEORGIA - ALABAMA)

The Coosa River formed by the confluence of the Etowah and Oostanaula Rivers in Rome, Georgia, flows westerly across the State and into the State of Alabama. The Chattooga River flows southwesterly through the State of Georgia and joins the Coosa River System in the State of Alabama 22 miles below the State line. A power dam constructed near Centre, Alabama, by the Alabama Power Company in 1961, impounds these waters to form the Lake Weiss reservoir.

On the basis of reports, surveys, and studies, the Secretary of Health, Education, and Welfare, having reason to believe that pollution of the Coosa River System caused by discharges of untreated and inadequately treated sewage and industrial wastes in Georgia is endangering the health and welfare of persons in Alabama, a state other than that in which the discharges originate, called a conference in the matter of pollution of interstate waters of the Coosa River System. The conference was held on August 27, 1963, at 9:30 a.m., in the Federal Court Room of the U.S. Post Office Building, Rome, Georgia.

The following conferees representing the State water pollution control agencies of Georgia and Alabama, and the Department of Health, Education, and Welfare attended the conference.

Ira L. Myers, M.D.	Chairman, Alabama Water Improvement Commission Montgomery, Alabama

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John H. Venable, M. D.	Director, Georgia Department of Public Health Atlanta, Georgia
John R. Thoman	U. S. Department of Health, Education, and Welfare Atlanta, Georgia
Murray Stein, Chairman	U. S. Department of Health, Education, and Welfare Washington, D. C.

The following also participated in the conference:

Herbert M. Barnum	Williams, Sweitzer and Barnum Rome, Georgia
Arthur N. Beck	Technical Secretary, Alabama Water Improvement Commission Montgomery, Alabama
Roy Boston	Director, Environmental Health Branch Georgia Department of Public Health Atlanta, Georgia
R. H. Byers	Director, Water Quality Service Georgia Department of Public Health Atlanta, Georgia
I. B. Byrd	Chief Fisheries Biologist Alabama Department of Conservation Montgomery, Alabama
John Chestnut	Councilman Cedar Bluff, Alabama
Thomas J. Espy, Jr.	City Attorney Summerville, Georgia
John M. Fairall	Department of Health, Education, and Welfare Cincinnati, Ohio
John G. Farley, Jr.	Alabama Power Company Birmingham, Alabama
Charles Fornby	Judge Probate Cherokee County, Alabama

Bruce Hamler	City Manager Rome, Georgia
W. Harry Hardeman	Mayor pro tem Trion, Georgia
Jay B. Hunt	Civil Engineer Centre, Alabama
Charles D. Kelley	Chief, Division of Game and Fish Alabama Department of Conservation Montgomery, Alabama
Ray Kelley	Gaylesville, Alabama
E. V. McSwiney	Georgia Kraft Company Rome, Georgia
Ralph A. Meade	State Representative Cherokee County, Alabama
Virgil A. Minch	The Mead Corporation Chillicothe, Ohio
Felix Mobbs	Gaylesville, Alabama
Emmett O'Neal	President, Chamber of Commerce Centre, Alabama
Leon Parker	Superintendent of Education Centre, Alabama
W. F. Robertson	Riegel Textile Corporation Trion, Georgia
Jack Rodgers	Pepperell Manufacturing Company Rome, Georgia
W. K. Sommers, Jr.	Cedar Bluff, Alabama
Jerry Dan Stone	Chairman, Rural Area Development Program Centre, Alabama
A. H. Trotter	Cedar Bluff, Alabama
A. W. West	Department of Health, Education, and Welfare Cincinnati, Ohio

The Chairman of the conference pointed out that:

1. Under the Federal Water Pollution Control Act (33 U.S.C. 466 et seq.) pollution of interstate waters which endangers the health or welfare of persons in a State other than the one in which the discharges originate is subject to abatement under procedures described in section 8 of the Federal Act
2. The first step of this procedure is the calling of a conference.
3. The purpose of the conference is to bring the States and the Department of Health, Education, and Welfare together to lay a basis for future action by all parties concerned, and to give the States and localities an opportunity to take remedial action which may be indicated under State and local law.

Conferees representing the Alabama Water Improvement Commission, the Georgia Department of Public Health, and the Department of Health, Education, and Welfare were present throughout the conference.

Mr. A. W. West of the Department of Health, Education, and Welfare presented a report on the Coosa River System which specifically covered the sources of pollution, the type of wastes discharged, and the interference with water uses.

Mr. Arthur N. Beck of the Alabama Water Improvement Commission presented a report on the effects of interstate pollution of the Coosa River System on present and potential water uses in Alabama.

Dr. John H. Venable, Director, Georgia Department of Public Health, presented a statement on intrastate pollution in Georgia.

The conferee representing the State of Georgia objected to the validity of the conference proceedings and questioned Federal jurisdiction in this proceeding. The conferees representing the State of Alabama and the Department of Health, Education, and Welfare agreed to the following conclusions and recommendations:

1. The waters of the Coosa River System are interstate within the meaning of the Federal Water Pollution Control Act.
2. The waters of the Coosa River System are polluted by municipal and industrial waste discharges originating in the State of Georgia, and the effects of such pollution persist to and beyond the Georgia-Alabama State Line. This pollution of interstate waters is subject to abatement under section 8 of the Federal Water Pollution Control Act.
3. Organic pollution from municipalities and industries, and silt and clay discharges from Georgia contribute to interstate pollution of the Coosa River System in Alabama damaging legitimate water uses by interfering with the propagation of fish and aquatic life, adversely affecting property values in Alabama, and interfering with recreational uses in the Coosa River and Weiss Lake. Waste discharges in Georgia contribute to bacterial pollution which crosses the Alabama State line.
4. The Georgia conferee objected to the findings of the Department of Health, Education, and Welfare, concerning the contribution to interstate pollution of silt and clay discharges, and stated

that silt and clay discharges from Georgia do not adversely affect the health or welfare of persons in Alabama.

5. The measures presently used for the disposal of sewage, treatment of industrial wastes, and reduction of silt content, are inadequate to secure abatement of pollution of the interstate waters of the Coosa River System. The delays encountered in the abatement of such pollution are due to the failure to install adequate waste treatment facilities or other methods for reduction of pollution, by many of the municipalities and industries concerned.

6. A minimum of 4 ppm dissolved oxygen is necessary in order to maintain water of satisfactory quality at the Georgia-Alabama State line.

7. Municipal wastes and sewage wastes shall receive secondary treatment with chlorination so that the interstate waters of the Coosa River system will be of sufficient quality to be used for water contact sports.

8. Silt discharges can be successfully kept out of the Coosa River System. The Thompson Weinman Company provides an example of what can be done with proper operation of waste treatment facilities, although this Company does need to provide additional measures so as to lessen the danger of accidental releases. Wastes from New Riverside Ochre Company are equally amenable to treatment.

9. All industries discharging wastes which contribute to interstate pollution of the Coosa River System in Alabama shall provide adequate treatment for their wastes.

Riegel Textile Corporation has notified the Conference Chairman that it has voluntarily agreed to install remedial facilities for waste treatment. Its time schedule for the construction of remedial facilities consists of: Preliminary determination of applicable treatment methods and design criteria, upon which to base working plans by March, 1964; preparation of detailed engineering design and cost estimates in the following four to six months, bids, awards, and construction to follow immediately upon completion of engineering design and cost estimates; and the facilities in operation by the middle or latter part of 1965.

10. The city of Trion, Georgia and Riegel Textile Corporation plan a program of joint waste treatment.
11. Cognizance is taken of the efforts of the Georgia Kraft Company, formerly known as Rome Kraft Company to secure adequate treatment of its wastes. It is recommended that a technical group composed of representatives of the Department of Health, Education, and Welfare, Alabama, Georgia, the Georgia Kraft Company, and appropriate interested agencies be established to determine an equitable solution to the problem of maintaining water quality below the point of waste discharge by Georgia Kraft, under present and proposed regimens of the river.
12. The effects of discharges from Federal or private impoundments on the water quality of the Coosa River System need to be investigated by the group of technical representatives to be established as recommended in paragraph 11.
13. The conference may be reconvened at the call of the Chairman.

We hope that this session will move on from here. I think, as many of you well know, this conference is dealing with water quality management in a stream in a real forward-looking operation.

I hope we will get reports from which we can evaluate the progress that has been made since 1963. I would like to emphasize that on the basis of the information that we have had and we will be able to evaluate here, this session of the conference was not reconvened because of the lack of progress being made in accordance with the recommendations and the conclusions reached in 1963.

As a matter of fact, we have worked very closely with Georgia and Alabama. Most of the sources of pollution with which we are concerned, of course, are in Georgia. We think Georgia and the water pollution control authorities, and Rock Howard, and the states, and the industries here have reacted for the most part in an exemplary manner. Where some sources proved to be recalcitrant the state agencies took forthright action, and I think we are moving forward.

The question that we have to look into here is whether the measures we have taken are going to be sufficient to preserve the water quality of a river for a maximum number of water uses.

We do know that in considering the river, we have to consider the entire regimen -- the flows of the river, the quantity of water, as well as the amount of treatment we can reasonably ask each discharger to put in at the source.

I think everyone using that river has to recognize that he has to cooperate in doing this if we are going to have a river we can all use. I think the objectives are very clear.

We would like to see the river be used for an expansion of population and industry, all industry, and yet let us have the maximum number of water uses of that water.

This conference, as you know, is a conference between the States of Alabama, Georgia and the United States Department of the Interior.

Alabama is being represented by Mr. Joe Crockett; Georgia, by Mr. Rock Howard; the Department of the Interior conferee is Mr. John Thoman; and my name is Murray Stein, and I am the representative of Secretary Udall and have been designated as chairman by him.

The parties to the conference are the two states and the Federal Government. We will call upon the states and the Federal Government for statements.

Any participants should ask either the State or the Federal conferees, for an appropriate place on the agenda, if they wish to make a statement or they should see the chairman.

We would hope that the Federal Government and the states will make statements. The conferees can make comments or ask questions. We would ask the other people participating to limit their comments and questions to statements that you will make.

We will not take comments or statements from the floor, because if we do that, we will be here for a very long time. And the procedure we have used, I think, has been effective in the past.

At the conclusion of that, we will have a discussion among the conferees, and unless something unforseen happens, we expect to do this right here in public, and we will have the executive session where everyone can view what we are doing.

We would hope to arrive at conclusions and recommendations. I would hope that anyone other than the conferees participating will come to the lectern and identify themselves for the purposes of the record.

If you have any written statements, it would be helpful if you would give it to the reporter prior to making your statement. We would hope to get a summary of the conference out in a few weeks.

A transcript will be printed, but generally that has not been available for three or four months, but when it is made available; we will send copies to the state agencies, and you can get your copies from the state.

Mr. Thoman, I would like to call on you for the Federal presentation.

MR. JOHN R. THOMAN: The report that has been prepared for this meeting will be presented by Mr. Paul Traina, director of Technical Services of the Southeast Water Laboratory in Athens, Georgia.

MR. PAUL TRAINA: With your permission, Mr. Chairman, I will submit a formal copy of the report for the record, and then to keep this as brief as we can, I will just refer to portions of it.

MR. STEIN: With there being no objection, this report will be entered into the record in its entirety, as if read.

MR. TRAINA: For the record, there are figures which I am summarizing in my statement.

MR. STEIN: The tables--if you have tables, the tables and charts will appear in the proper place.

MR. TRAINA: At the conference concerning interstate pollution of the Coosa River and its tributaries, held on August 27, 1963, it was determined that untreated and inadequately treated sewage and industrial wastes discharged into the Coosa River in the reach between Rome, Georgia, and the Georgia-Alabama state line polluted this interstate reach of the Coosa River in Georgia and Alabama.

These waste discharges lowered the dissolved oxygen content of parts of this reach below the four parts per million which is considered essential for the support of a suitable warm-water sport fishery.

The conference summary requires that all polluters install secondary treatment or its equivalent for removal of wastes. When the required waste treatment facilities are in operation, pollutional discharges to this stretch will have been reduced from a total of 87,000 pounds per day of five-day B.O.D. to approximately 27,000 pounds per day.

The problem of water quality is compounded, however, by factors other than organic waste discharges. First, there are low river flows caused by regulation of the Etowah River by Allatoona Reservoir.

Second, the organic wastes from Georgia Kraft pulp and paper manufacturers, which represent the major pollutional load, are discharged to the headwaters of the Weiss impoundment.

The lower velocity and increased depth which result from this impoundment reduce the natural reaeration capacity of the Coosa River and retard the recovery of the river to recommended levels of dissolved oxygen.

Further, water temperatures in the Weiss impoundment are higher than would occur in the natural free-flowing regime primarily due to the absorption of solar radiation.

And finally, heat is added by the discharge of used cooling water from the Georgia Power Company's Plant Hammond facility at the point just upstream of Georgia Kraft.

Higher temperatures increase the rate of oxygen utilization by bacteria in decomposing organic material, thereby causing a more rapid depletion of oxygen in the receiving waters.

It also can contribute to stratification of the waters of the impoundment. Because of these complicating physical conditions, the provision of a minimum D.O. of four parts per million cannot be met by the recommended waste treatment alone.

A combination of high water temperature, pollutional discharges and low river flow has a synergistic effect in inhibiting the desired use of this part of the Coosa River for a warm-water sport fishery.

Previous evaluations have concluded that to meet waste loading demands in the Coosa River when the present abatement program is completed, a minimum flow of 2000 cubic feet per second will be required to guarantee a minimum dissolved oxygen of four parts per million.

These evaluations were based on the average daily water temperature of 79 degrees Fahrenheit during August in the free-flowing section of the Coosa River.

However, the addition of heat load to the impoundment section by solar radiation and cooling water causes temperatures which are higher than that observed in unimpounded stretches.

To ascertain the expected water temperature in the Weiss impoundment, the data collected during 1965 and 1966 at the Georgia-Alabama state line were analyzed.

These temperatures are generally higher than those used in previous supplemental flow analyses. Therefore, to meet the conference requirements, either (1) a greater flow than 2000 cubic feet per second is required, or (2) increased waste removal must be considered to maintain a minimum dissolved oxygen of four parts per million, or (3) the artificial heat load must be reduced.

To insure that water quality will be adequate at least 90 percent of the time, the temperature which is exceeded ten percent of the time is considered as the critical temperature for evaluating the necessary supplemental flow or additional waste removals.

I would like now to refer to Table I (See page 37). Based on these temperatures and the projected treated waste loads in the Coosa River between Rome and the state line totaling 25,000 pounds per day of five-day biochemical oxygen demand, the total daily flow in the Coosa River to maintain a minimum dissolved oxygen of four parts per million was evaluated.

This analysis assumes an unstratified river condition. The total daily flow requirements are 1950 cubic feet per second in June, 2400 cubic feet per second in July, 2300 cubic feet per second in August, 2150 cubic feet per second in September and 1600 during the first half of October.

During the latter half of October, the reservoirs cooled very rapidly and increased temperatures is no problem. There will be a number of days river flow will be less than the required total flow and supplemental augmentation will be needed.

On an overall basis, flow augmentation to meet the total flow requirements will be necessary on approximately 21 days during the period of June through October. This ranges from a high value of ten days during September to no augmentation during June.

To estimate the amount of daily supplemental flow required, a statistical analysis of the daily flows in the Coosa River for water years 1963, '64 and '65, during the period of June through October, was made; and I would like to mention here that these three years were picked only for an operational program, not for design.

The difference between required flow stated above and the daily flow as observed during these years is the required supplemental flow, and here I would like to refer to Tables II and III. (See page 39)

No supplemental flow would have been required in June on the days when augmentation would have been required. The average supplement was 300 cubic feet per second in July, 300 cubic feet per second in August, 600 cubic feet per second in September and 230 cubic feet per second in October.

However, on ten percent of the days when augmentation would have been required, the supplement would have been as much as 900 cubic feet per second in July, 640 cfs in August, 800 in September, and 280 cfs in October.

The reservoir storage necessary to insure that adequate supplementary flow will be available for nine years out of ten was calculated by inspecting the daily flows from 1950 to 1965 for June, July, August and September, and this was the analysis we made as regards the design. The necessary storage requirement based on ten-percent recurrence interval is approximately 56,000 acre feet.

This storage represents 11.2 percent of the total maximum storage contained in the Corps of Engineers Allatoona Reservoir plus Carters Reservoir which is presently under construction.

If the total storage were supplied in Allatoona Reservoir, the lost power revenue because of supplementary flow for waste assimilation would be about $80,000 per year.

That figure was obtained from the Mobile District Corps of Engineers. It should be emphasized that less than this amount of storage will be required for flow augmentation at least 90 percent of the time.

The only feasible alternative to flow augmentation at the present time is to reduce waste discharges below the specified level.

The important period for evaluating effects of these continuous waste discharges is during August, when the combination of low flow and higher temperature produce the most critical waste assimilation conditions.

Based on previous occurrences, ten-percent low daily flow for this month is 1600 cubic feet per second. If allowable waste discharges are assessed, based on this flow, four parts per million of dissolved oxygen will be maintained 90 percent of the time during August at a temperature of 83.5 degrees Fahrenheit with no additional supplemental flow.

Under these conditions, the total allowable waste discharge to this reach of the Coosa River is 15,500 pounds per day of five-day biochemical oxygen demand.

The cost of providing the necessary additional waste removal at the Georgia Kraft Company, which discharges over 80 percent of the total waste load to this reach, would be $750,000 in capital investment with an annual operating expenditure of $120,000.

The previous analysis is based on present waste discharges when the required treatment program is completed and in operation. If any increase in organic waste load is anticipated due to expansion of present installations or location of new sources, and if waste removal percentages are not increased, the supplemental flow must be increased and will be required a greater percentage of the time.

We have made an estimate of this. We find the estimate of the total flow required for projected waste discharges in 1980 and 2015 show that the total flow in the Coosa River necessary to maintain four parts per million of dissolved oxygen will increase by an average of 72 percent by 1980 and 82 percent by 2015 assuming constant waste removal efficiencies.

In the absence of any flow augmentation, waste removals in 1980 approximating 92.5 percent will be required for the pulp and paper producers. Necessary waste removal will approximate 95 percent in 2015.

If augmentation to account for present waste discharges only is supplied, the paper and pulp interests must remove 86.5 percent of their wastes by 1980 and 92 percent by 2015.

These removals are predicated on the contingency that all of the expected expansion or location of new sources will occur. And I might add here, as part of the initial work here, a number of economic studies were made upon which this previous analysis was based.

I would like now to again talk a little about the future situation and discuss the effects of increased cooling water discharges to the Coosa River below Rome.

Prior to the installation of a mixing and diffusing system for cooling water discharges in 1964, the Georgia Power Company effluent with a full load on the plant of 300,000 KW, and a river flow of 2000 cubic feet per second raised the temperature of the Coosa River by about three and a half degrees Fahrenheit.

The previous analysis, which I just referred to before, reflects this heat load to the river, since it is based on observed temperatures during the warm weather months of 1965 and 1966.

On February 3, 1967, the Georgia Power Company announced plans to expand the Plant Hammond facility from 300,000 kilowatts to 800,000 kilowatts at a cost of 50 million dollars.

This expansion is expected to be fully operational by 1970. As temperatures increase, the rate of satisfaction of organic material is increased, thereby causing a more rapid depletion of dissolved oxygen.

In addition, without adequate control measures, the heated water, being lighter, tends to rise to the surface and prevents mixing with the lower levels. This stratification reduces the volume available for the assimilation of organic wastes.

The expansion of the Plant Hammond facility will inevitably mean a greater heat load discharged to the river with resulting increased water temperatures.

Cooling water requirements for power plants are about five million gallons per hour per 100,000 kilowatts. This indicates that, when the full capacity of the plant is being used for power generation, approximately 1490 cubic feet per second of cooling water will be required at Plant Hammond after the expansion.

Georgia Power Company reports an average of 18 degrees Fahrenheit rise in cooling water temperatures over the intake temperature. The standards of the Georgia Water Quality Control Board require that water temperatures are "not to be increased more than ten degrees Fahrenheit above intake temperatures" for fish and aquatic life.

To meet this standard, assuming complete mixing in the river below the outfall, a minimum flow of 2680 cubic feet per second in the Coosa River is required. Again, using the period of 1963 to 1965, river flow would have been below this value approximately nine percent of the time in June; 15 percent of the time in July; 41 percent of the time in August; 46 percent of the time in September; and 31 percent of the time in October.

Therefore, unless some cooling process, as well as diffusion to assure complete mixing is accomplished, the standard requiring no greater than a ten-degree-Fahrenheit increase in temperature would have been violated during periods of peak generation an average 26 percent of the time from June to October 15 each year with a maximum of 46 percent during September.

There are two alternatives to the control of the temperature problems resulting from the expansion of the Georgia Power Company plant.

The first is to supply additional augmentation to guarantee a minimum low flow in the Coosa River of 2680 cubic feet per second to adequately dilute the additional heat load.

Again, in the years 1963, '64 and '65, which have been considered representative, this would have required additional supplemental flow beyond those previously stated of 720 cubic feet per second in June; 280 cubic feet per second in July; 380 cubic feet per second in August; 530 cubic feet per second in September; and 1080 cubic feet per second in October.

Augmentation would then be necessary on an average of 38 days during the period of June to October versus the estimate of 21 days required under present conditions.

The above flows are necessary for temperature control only and are predicated on the ten-degree-Fahrenheit permissible increase.

The other alternative is the installation of heat dissipation devices at Plant Hammond to remove the additional heat load caused by expansion of the generating capacity from the cooling water before discharge to the Coosa River.

Summary and conclusions of this report -- due to regulated river flow above waste discharges and impoundment below, four parts per million of dissolved oxygen necessary for the propagation and maintenance of fish life as required by the Federal Enforcement Conference of August 27, 1963, cannot be maintained in the Coosa River by waste treatment alone.

In addition, there may be an increase in heat pollution discharged to the river due to the enlargement of the Georgia Power

Company Plant Hammond installation.

The recommendations of this report are as follows:

1. The total flow in the Coosa River at Mayo's Bar during the warm weather months shall be not less than the following: June, 1950 cubic feet per second; July, 2400 cubic feet per second; August, 2300 cubic feet per second; September, 2150 cubic feet per second; October, 1600 cubic feet per second.

Any flows which are less than these levels should be supplemented by the necessary amount after present waste treatment plans are completed.

2. To insure adequate supplementary flow to maintain four parts per million of dissolved oxygen after the implementation of the present waste treatment program, the Secretary of the Interior should request the U. S. Army Corps of Engineers to provide 56,000 acre feet of storage for low flow augmentation in either the existing Allatoona Reservoir or the Carters Reservoir now under construction or the optimal combination of both installations.

3. Allowable five-day biochemical oxygen demand waste discharges to this reach of the Coosa River should not exceed 27,000 pounds per day. When economic expansion of the area occurs, higher percentages of waste removals will be necessary to meet this allowable waste load.

4. In consultation with the Georgia Water Quality Control Board and the Federal Water Pollution Control Administration, Georgia Power Company should install heat dissipation devices at the Plant Hammond facility or take other equivalent measures to

remove the heat load generated by the proposed increase in power capacity.

Georgia Power Company should also provide for effective diffusion of the cooling water discharge to insure complete mixing and so that the effluent does not contribute to a stratified condition in the river.

(Following is the complete text of the "Report on Effects of Water Temperature, Coosa River - Weiss Impoundment," prepared December, 1967, by the Southeastern Region, Federal Water Pollution Control Administration, Athens, Georgia.)

REPORT ON

EFFECTS OF WATER TEMPERATURE
COOSA RIVER - WEISS IMPOUNDMENT

Southeastern Region
Federal Water Pollution Control Administration
Athens, Georgia

December 1967

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Table A-1, Estimated Waste Loads, Coosa River, Rome, Georgia, Area

EFFECTS OF WATER TEMPERATURE
COOSA RIVER - WEISS IMPOUNDMENT

Introduction:

At the Conference concerning interstate pollution of the Coosa River and its tributaries held on August 27, 1963, it was determined that untreated and inadequately treated sewage and industrial wastes discharged to the Coosa River in the reach between Rome, Georgia, and the Georgia-Alabama state line polluted this interstate reach of the Coosa River in Georgia and Alabama. These waste discharges lowered the dissolved oxygen content of parts of this reach below the 4 parts per million (ppm) which is considered essential for the support of a suitable warm water sport fishery. The Conference Summary requires that all polluters install secondary treatment for removal of wastes. When the required waste treatment facilities are in operation, pollutional discharges to this stretch will have been reduced from a total of 87,000 pounds per day of 5-day B.O.D. to approximately 27,000 lbs./day.

The problem of water quality is compounded, however, by factors other than organic waste discharges. There are low river flows caused by regulation of the Etowah River at Alatoona Reservoir. The organic wastes from Georgia Kraft pulp and paper manufacturers, which represent the major pollutional load, are discharged to the headwaters of the Weiss impoundment. The lower velocity and increased depth which result from this impoundment reduce the natural reaeration capacity of the

Coosa River and retard the recovery of the river to suitable levels of dissolved oxygen. In addition, water temperatures in the Weiss impoundment are higher than would occur in a natural free-flowing regime primarily due to absorption of solar radiation. Heat is also added by the discharge of used cooling water from the Georgia Power Company's Plant Hammond facility at a point just upstream of Georgia Kraft. Higher temperature increases the rate of oxygen utilization by bacteria in decomposing organic material thereby causing a more rapid depletion of oxygen in the receiving waters. It also contributes to stratification of the waters of the impoundment. Because of these complicating physical conditions, the provision of a minimum D.O. of 4 ppm cannot be met by normal secondary treatment alone. A combination of high water temperature, pollutional discharges and low river flow has a synergistic effect in inhibiting the desired use of this part of the Coosa River for a warm water sport fishery.

Effects of Water Temperature:

Previous evaluations have concluded that to meet waste loading demands in the Coosa River when the present abatement program is completed, a minimum flow of 2,000 cfs will be required to guarantee a minimum D.O. of 4 ppm.(1)(2)(3) These evaluations were based on the average daily water temperature of 79°F during August in the free-flowing section of the Coosa River. However, the addition of heat load to the impoundment section by solar radiation and cooling water causes temperatures which are higher than that observed in un-impounded stretches. To ascertain the expected water temperature in the Weiss impoundment, data collected over the past two years at the Georgia-Alabama state line were analyzed. A summary of these data is presented in Table I for the expected daily water temperatures in June, July, August, September and October. The values for October are for the first half of the month only since the reservoir cools very rapidly during the latter half. These temperatures are generally higher at the 10% probability level than those used in the previous supplemental flow analyses. Therefore, either (1) a greater supplemental flow is required or, (2) increased waste removals must be considered to maintain a minimum D.O. of 4 ppm or, (3) the artificial heat load must be reduced. To insure that water quality will be adequate at least 90% of the time, the temperature which is exceeded 10% of the time will be used as the critical temperature for evaluating the necessary supplemental flow or additional waste removals. These temperatures are 78.3°F for June; 84.3°F for July; 83.5°F for August; 80.4°F for September; and 73°F for October.

Based on these temperatures and the projected treated waste loads totaling 25,000 lbs./day of 5-day B.O.D., the total flow in the Coosa River to maintain a minimum D.O. of 4 ppm was evaluated. This analysis assumes an unstratified river condition. Figure I shows the total flow required vs. temperature. Table II summarizes this figure and indicates the number of days in each month, based on previous flow records, that river flow will be less than necessary to maintain the required dissolved oxygen level and supplemental augmentation will be required. On an

TABLE I

EXPECTED WATER TEMPERATURES
WEISS IMPOUNDMENT
GEORGIA-ALABAMA STATE LINE

	TEMPERATURES °F	
MONTH	MEAN	EXCEEDED 10% OF TIME
June	74.4	78.3
July	81.0	84.3
August	81.3	83.5
September	78.9	80.9
October*	71.0	73.0

*Only to October 15

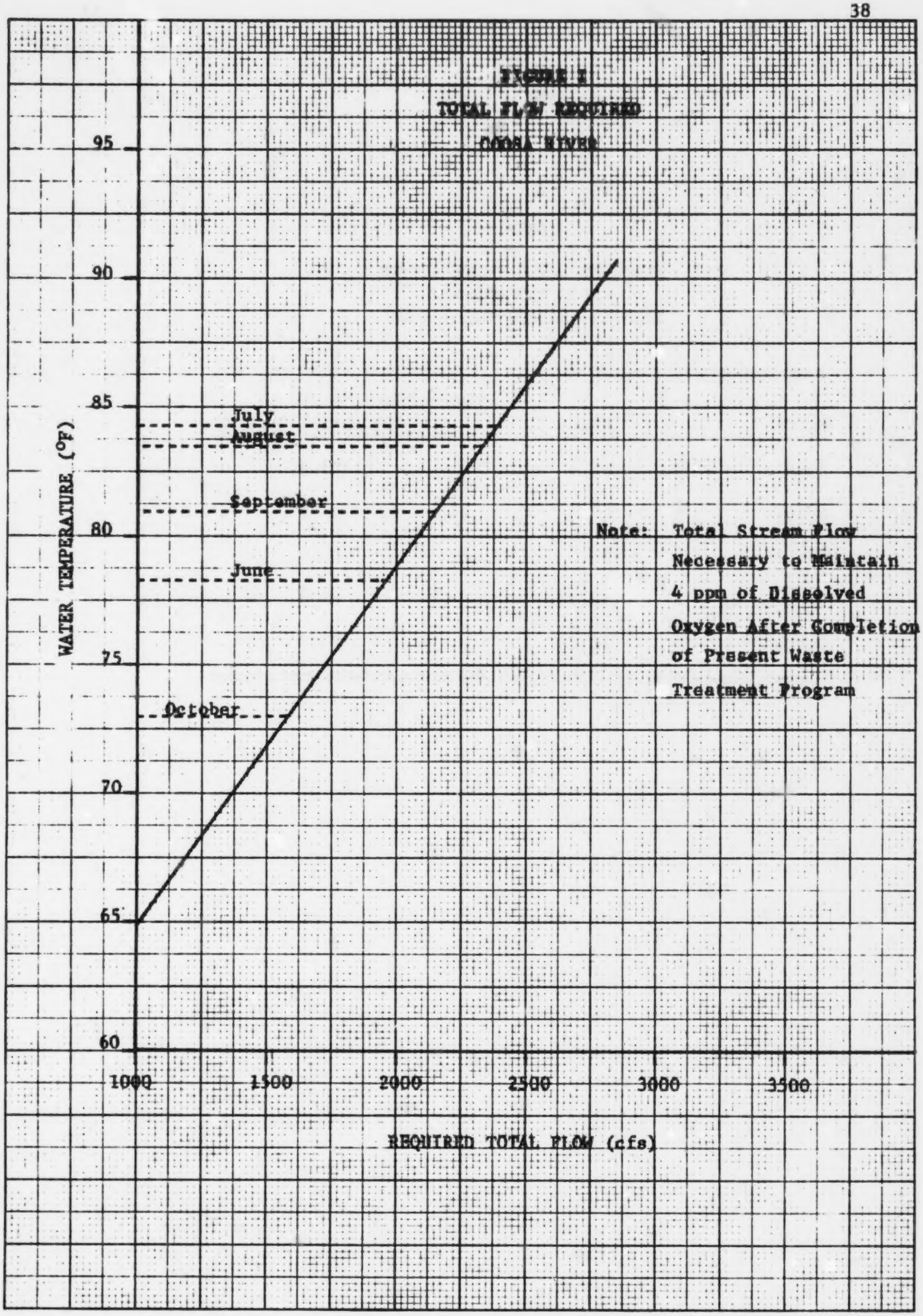

FIGURE I

TOTAL FLOW REQUIRED

COOSA RIVER

Note: Total Stream Flow Necessary to Maintain 4 ppm of Dissolved Oxygen After Completion of Present Waste Treatment Program

TABLE II

COOSA RIVER REQUIRED FLOWS*
MINIMUM D. O. = 4 PPM

MONTH	WATER TEMPERATURE °F	TOTAL DAILY FLOW (cfs)	NO. OF DAYS SUPPLEMENTAL FLOW NECESSARY
June	78.3	1950	0
July	84.3	2400	1.5
August	83.5	2300	8.0
September	80.9	2150	10.0
October**	73.0	1600	1.5

TABLE III

DAILY SUPPLEMENTAL FLOW REQUIRED IN CFS

MONTH	MEAN	VALUE EXCEEDED 10% OF TIME
July	300	900
August	300	640
September	600	800
October**	230	280

*This table is based on an examination of daily flow during the 1963, 1964, 1965 water years.

**To October 15.

overall basis, flow augmentation will be necessary on approximately 21 days during the period of June through October. This ranges from a high value of 10 days during September to no augmentation during June.

To estimate the amount of daily supplemental flow required, a statistical analysis of the daily flows in the Coosa River during the period of June through October was made. The difference between the required flow listed in Table II and the observed daily flow is the necessary supplemental flow. These data are summarized in Table III. For example, from Table II supplemental flow will be required on 10 days in September in any given year to guarantee a total flow of 2150 cfs. From Table III, the average daily supplemental flow in September will be 600 cfs but the amount will exceed 800 cfs on 10% of the days that augmentation is required.

The necessary storage requirement based on the 10% recurrence interval is approximately 56,000 acre feet. This storage represents 11.2% of the total maximum storage contained in the Corps of Engineers Alatoona Reservoir and Carters Reservoir which is presently under construction. If the total storage were supplied in Alatoona Reservoir, the lost power revenue because of supplementary flow for waste assimilation would be about 80,000 dollars per year. It should be emphasized that less than this amount of storage will be required for flow augmentation at least 90% of the time.

The only feasible alternative to flow augmentation at the present time is to reduce waste discharges below the specified level.

The important period for evaluating effects of these continuous waste discharges is during August when the combination of low flow and higher temperature produce the most critical waste assimilation conditions. The unsupplemented 10% low daily flow for this month of 1600 cfs has been used as the available river discharge. If allowable waste discharges are assessed based on this flow, 4 ppm of D.O. will be maintained 90% of the time during August at a temperature of 83.5°F with no additional supplemental flow. Under these conditions, the total allowable waste discharge to this reach of the Coosa River is 15,500 lbs./day of 5-day B.O.D. The cost of providing the necessary additional waste removal at the Georgia Kraft Company, which discharges over 80% of the total waste load to this reach, would be $750,000 in capital investment with an annual operating expenditure of $120,000.

The previous analysis is based on present waste discharges when the required treatment program is completed and in operation. If any increase in organic waste loading is anticipated due to expansion of present installations or location of new sources, and if waste removal percentages are not increased, the supplemental flow must be increased and will be required a greater percentage of the time. An estimate of the total flow required for projected waste discharges in 1980 and 2015 is presented in Table IV. The future waste loads are listed in Table A-1. The amount of augmentation as well as the percent of time that it will be necessary will increase materially by 1980. This is primarily due to the projected expansion of pulp and paper production. In the absence of any augmentation, waste removals in 1980 approximating 92.5%

TABLE IV

COOSA RIVER REQUIRED FLOWS
1980 and 2015
MINIMUM D. O. = 4 PPM

MONTH	WATER TEMPERATURE °F	TOTAL DAILY FLOW cfs	NO. OF DAYS SUPPLEMENTAL FLOW IS NECESSARY
A) 1980			
June	78.3	3375	5.5
July	84.3	4075	13.0
August	83.5	4000	27.0
September	80.9	3675	27.0
October*	73.0	2800	5.0
B) 2015			
June	78.3	3525	6.5
July	84.3	4350	15.0
August	83.5	4250	28.0
September	80.9	3900	27.5
October*	73.0	2800	5.0

*Figures only to October 15.

will be required for the pulp and paper producers. Necessary waste removal will approximate 95% in 2015. If augmentation to account for present waste discharges only is supplied, the pulp and paper interests must remove 86.5% of their wastes by 1980 and 92% by 2015. These removals are predicated on the contingency that all of the expected expansion or location of new sources will occur.

Effects of Cooling Water Discharges:

Prior to the installation of a mixing and diffusing system for cooling water discharges in 1964, the Georgia Power Company effluent with a full load on the plant (300,000 KW) and a river flow of 2,000 cfs raised the temperature of the Coosa River by about 3.5°F.(4) The previous analysis reflects this heat load to the river since it is based on observed temperatures during the warm weather months of 1965 and 1966. On February 3, 1967, the Georgia Power Company announced plans to expand the Plant Hammond facility from 300,000 kilowatts to 800,000 kilowatts at a cost of $50 million.(5) This expansion is expected to be fully operational by 1970. As temperatures increase, the rate of satisfaction of organic material is increased thereby causing a more rapid depletion of dissolved oxygen. In addition, without adequate control measures, the heated water, being lighter, tends to rise to the surface and prevents mixing with the lower levels. This stratification reduces the volume available for the assimilation of wastes.

The expansion of the Plant Hammond facility will inevitably mean a greater heat load discharged to the river with resulting increased water temperatures. Cooling water requirements for power plants are about 5 million gallons per hour per 100,000 kilowatts.(6) This indicates that, when the full capacity of the plant is being used for power generation, approximately 1490 cfs of cooling water will be required at Plant Hammond after the expansion. Georgia Power reports an average of 18°F rise in cooling water temperature from the intake.(4) If supplemental flow is provided for organic waste discharges, a minimum of 1600 cfs will be available during October and flows as low as this value will occur 9% of the time. Assuming that the cooling water effluent is completely mixed immediately below the outfall, the increase in river water temperature would be 16.7°F. The standards of the Georgia Water Quality Control Board require that water temperatures are "...not to be increased more than 10°F above intake temperatures" for fish and aquatic life.(7) To meet this standard, assuming complete mixing in the river below the outfall, a minimum flow of 2680 cfs in the Coosa River is required. River flows will be below this value approximately 9% of the time in June; 15% of the time in July; 41% of the time in August; 46% of the time in September; and 31% of the time in October. Therefore, unless some cooling process as well as diffusion to assure complete mixing is accomplished, the standard requiring no greater than a 10°F increase in temperature will be violated during periods of peak generation an average 26% of the time from June to October 15 each year with a maximum of 46% during September.

There are two alternatives to the control of the temperature problem resulting from the expansion of the Georgia Power Company plant. The first is to supply additional augmentation to guarantee a minimum low flow in the Coosa River of 2680 cfs to adequately dilute the additional heat load. This would require additional supplemental flow beyond that necessary for organic waste assimilation of 720 cfs in June; 280 cfs in July; 380 cfs in August; 530 cfs in September; and 1080 cfs in October. Augmentation would then be necessary on an average of 38 days during the period of June to October vs. the estimate of 21 days for the present heat load being discharged. The above flows are necessary for temperature control only and are predicated on a 10°F permissable increase.

The other alternative is the installation of heat dissipation devices at Plant Hammond to remove the additional heat load caused by expansion of the generating capacity from the cooling water before discharge to the Coosa River. This will insure that the water temperature increase in the Coosa River will not exceed 10°F during the minimum low flow month of October.

Summary and Conclusions:

Due to regulated river flow above waste discharges and impoundment below, 4 ppm of dissolved oxygen necessary for the propagation and maintenance of fish life as required by the Federal enforcement conference of August 27, 1963, cannot be maintained in the Coosa River by normal secondary treatment of all wastes alone. In addition, there may be an increase in heat pollution discharged to the river due to the enlargement of the Georgia Power Company Plant Hammond installation.

The recommendations of this report are as follows:

1) The total flow in the Coosa River at Mayo's Bar during the warm weather months shall be not less than the following: June, 1950 cfs; July, 2400 cfs; August, 2300 cfs; September, 2150 cfs; October, 1600 cfs. Any flows which are less than these levels should be supplemented by the necessary amount after present waste treatment plans are completed.
2) To insure adequate supplementary flow to maintain 4 ppm of D.O. after the implementation of the present waste treatment program, the Secretary of the Interior should request the U. S. Army Corps of Engineers to provide 56,000 acre feet of storage for low flow augmentation in either the existing Alatoona Reservoir or the Carters Reservoir now under construction or the most efficacious combination of both installations.
3) Allowable 5-day B.O.D. waste discharges to this reach of the Coosa River should not exceed 27,000 lbs./day. When economic expansion of the area occurs, higher percentages of waste removals will be necessary to meet this allowable waste load.
4) Georgia Power Company should install heat dissipation devices at the Plant Hammond facility or take other equivalent measures to remove the heat load generated by the proposed increase in power capacity. Georgia Power Company should also provide for effective diffusion of the cooling water discharge to insure complete mixing and so that the effluent does not contribute to a stratified condition in the river.

REFERENCES

1. Flow Requirements - Coosa River at Rome, Georgia, P. Traina U. S. Government Memorandum, May 21, 1965

2. Report on the Dissolved Oxygen Content and Requirements in the Interstate Reach of the Coosa River between Rome, Georgia, and the Georgia-Alabama State Line, July 1966, A. W. West, FWPCA, Cincinnati, Ohio

3. Thermal Effects on Water Quality in the Coosa River, February 1967, P. A. Krenkel, Statement to Georgia Water Quality Control Board in behalf of Georgia Kraft.

4. Comments on Draft Progress Report of the Coosa River Technical Subcommittee, August 13, 1965, Georgia Power Company.

5. Atlanta Constitution, February 3, 1967.

6. Fish and River Pollution, J. R. Erichsen Jones, Butterworths and Co., 1964.

7. Establishment of Water Quality Standards and Classifications for Interstate Waters in the State of Georgia, June 1967, Georgia Water Quality Control Board.

APPENDIX

TABLE A-1

ESTIMATED WASTE LOADS
COOSA RIVER
ROME, GEORGIA, AREA

	1965		Present Plans Completed		1980		2015	
	Unt.	Treat.	Unt.	Treat.	Unt.	Treat.	Unt.	Treat.
Rome	6.8	6.8	7.1	1.4	8.7	1.7	13.0	2.6
Miscellaneous	3.5	3.5	3.9	0.7	4.9	1.0	8.4	1.8
Celanese	3.9	3.9	4.3	2.5	5.4	2.5	9.5	2.5
Pepperell	0.8	0.8	3.4	0.9	1.1	0.2	1.9	0.4
Other Paper & Pulp	-	-	-	-	51.2	16.0)	256.0	38.4
Rome Kraft	64.0	32.0	64.0	20.0	96.0	20.0)		
Subtotal	79.0	47.0	82.7	25.5	167.3	41.4	288.8	45.7
5% (food)	4.0	2.5	4.0	1.2	8.4	2.0	14.4	2.3
TOTAL	83.0	49.5	86.7	26.7	175.7	43.4	303.2	48.0

MR. STEIN: Thank you, Mr. Traina. Are there any comments or questions? Mr. Howard?

MR. R. S. HOWARD: No.

MR. JOSEPH L. CROCKETT: No comment.

MR. THOMAN: No comment.

MR. HOWARD: We would like to make a statement in regard to that record later on.

MR. STEIN: I would like to thank you very much for that report, you and Mr. Gallagher for preparing it. I would like to make a comment just generally on this, because I think this report and what you have just heard is probably a landmark in water pollution control.

As you will note, in past cases, we have always been talking about discharges, municipal and industrial, and what we have to do to correct those discharges.

I think, as you can judge by this report, the assumption is that reasonable treatment at the source is going to be provided for these discharges, as in fact in many cases on the river it is.

This report looks beyond that, and as far as I know, this is the first time in one of these cases that we have done that to the total management of the river system to achieve the kind of water quality we need.

I suspect that in future water pollution control activities, we are going to see more and more of this approach, because I would guess that as time goes on in this country, there are going to be very few free rivers left.

They are almost all going to be regulated. I am sure that most of you are sophisticated here. But just briefly what we have had is a community or an industry going in on a river, putting in reasonable waste treatment, expecting a certain flow to go by the door, you get a dam above them, and an impoundment below them, regulated flows, flows being cut off and coming down in peak fashion to handle other requirements. I think, as you can recognize, in order to get the kind of water quality we are thinking of, we have to regulate both the flow and discharges and have them dovetail.

There is also another key point for those here who might not be thoroughly familiar with the problem. In dealing with a river system, we have to deal with the critical point.

This may be the analogy we can use as an electric utility system, because we do have enough power in our electric system when a week before Christmas when the men are in the offices turning the switches on and the ladies have the lights on and putting on the household appliances, there are enough resources not to let all the lights go out, and I think in the river system, we work the same way.

Unless you keep the water quality up, where at the peak points or the critical points, you're going to maintain the biota, you're going to have catastrophic results happening to the stream, and it's going to take a long time for that to adjust again.

. These critical points, as Mr. Traina points out, are generally at the periods of high temperature and low flow, and here they come in July and August, and a certain minimum flow has to be maintained.

It would be sad indeed if we maintained water quality, say, on the Coosa River for ten months a year and we allowed it to drop two months or for periods which are long enough to wipe out the normal life in the stream. In that case, we maintain the quality, and while we were maintaining the quality, we weren't getting the full advantage, but we had to wait to let that river recover itself. Just when it is getting on its feet again, we would hit that cycle and go down.

In other words, what we have to do after putting in the treatment is, as I understand this report, to provide that augmented low flow and temperature control to tide us over the critical periods so we really can make the maximum amount of use of the Coosa River to maintain the highest quality.

Mr. Thoman, do you have your next --

MR. THOMAN: Yes. Mr. Willis E. Ruland, Chief, Water Quality Control Section, Planning and Reports Branch, Engineering Division of the Mobile District Office of the Corps of Engineers. Mr. Ruland.

MR. WILLIS E. RULAND: Mr. Chairman, I am Willis E. Ruland of the Corps of Engineers, and I would like to make this statement for the Corps today.

The Corps of Engineers welcomes this opportunity to participate in the reconvened session of the Conference on Interstate Pollution of the Coosa River.

As you well know, we have worked closely with the Technical Subcommittee since 1963 in developing its recommendations towards improving the water quality in the Rome area.

This statement is oriented only toward the immediate problems facing us; namely, the estimated flows required to overcome the complex problems created by the organic and thermal pollution loads.

As has been emphasized in the past, the present authorized function of both the Allatoona and Carters projects is for flood control and power generation.

That is to say, low flow augmentation is not an authorized function in either project. This does not mean, however, that the authorization cannot or will not be changed in the future if circumstances warrant a modification and it is feasible from an engineering and economic standpoint.

In the event a proper petition is made to Congress for restudy of these projects and the economic feasibility of reallocation of storage is so determined, it is possible that a change in operation could be made.

But again, this will require Congressional action brought about by a request from local interests. It should be pointed out at this time that appraisal of the impact of the storage reallocation cannot be restricted to the loss of power revenue alone and a comprehensive reevaluation for all uses would be needed.

Existing policy of benefit analysis and cost allocation would have to be followed. For instance, if the required storage were to come from Allatoona, the reservoir draw-down during a year like 1957 would be approximately ten feet below the normal operating level.

The impact of this draw-down on the recreation would be extensive. Reaction by the general public and conservation interests would be unfavorable. An analysis of the average daily flows for water years 1931, 1941, 1954 and 1957 through 1967 shows that storage is necessary to provide flow augmentation to meet the required flows given in Table 2 of the FWPCA report vary from 2100 acre feet to approximately 93,000 acre feet.

If this storage is taken from allocated power pools, the effect on power revenues would have to be based on a storage of the more critical criteria of meeting the record low flows, which in this instance occurred before the project was constructed.

Caution is needed on use of the published daily stream flow data below Allatoona Reservoir for calculating this storage to be sure that these flows are adjusted for changes in daily storage in Allatoona Reservoir.

The reservoir has brought about improvements in low flows downstream since it started operation in 1950, and this existing augmentation must be considered.

At the present time, studies are continuing on regulation of releases from the Carters reregulation dam and although these studies have not been completed, early indications are that some degree of relief can be provided.

Tentative data indicate that supplemental flow can be provided to help fill in the weekend troughs created by power operation at Allatoona. If this proves to be possible, the problem presently existing in the Rome area as it relates to stream flow will then be greatly reduced.

As an example, the only time during water years 1964 through 1967 that the flows on the Coosa near Rome fell below the FWPCA calculated requirements was those days following when there had been no power releases at Allatoona on Saturdays, Sundays and Labor Day.

As indicated at the beginning, this statement considers only the immediate problems as it exists at the present time. Preliminary studies show that it does not appear possible to provide supplemental flows from the Allatoona and Carters complex to meet the demands after 1980 and 2015 indicated by the report.

It is quite evident, at least to the Corps of Engineers, that other storage projects, possibly for the sole purpose of water quality, will be necessary in addition to a higher degree of treatment and control of waste, both organic and thermal.

It is hoped that technological advances in waste treatment would be such that the reduction in waste loads discharged in the future would aid tremendously in solving this problem.

Although the apparent nature of the major problem at the moment in this area is thermal, other parameters are prevalent also, and in this connection, we now have a testing program presently under way at Allatoona concerning reservoir destratification.

We feel that the results of this program will greatly assist in establishing the possibility and practicality of destratification of large, deep reservoirs and the improvement of the chemical quality of the released waters.

Again, the opportunity to participate in this conference is greatly appreciated and the Corps of Engineers intends to continue to cooperate to its fullest with all concerned in the optimum development and enhancement of existing water resources of this area.

MR. STEIN: Thank you, Mr. Ruland. Are there any comments or questions?

MR. CROCKETT: No comments.

MR. STEIN: One of the recommendations made by Mr. Traina has been that the Secretary of the Interior be asked--and I changed this a little bit--has been asked to request the U. S. Corps of Engineers to provide 56,000 acre feet of storage for low flow augmentation in either the existing Allatoona Reservoir or the Carters Reservoir now under construction or the most efficacious combination of both installations.

Do you have any problem with that 5600 feet--56,000 acre feet? Does that meet your computations in a general sense?

MR. RULAND: Well, I don't know how the 56,000 was developed, but I believe it was developed from the record low flows in the Rome area, record low flows since the project was completed, and there, again, you have to be careful in using them, because you have to consider the released water out of Allatoona, the actual loss in storage in Allatoona during that period, in order to come up with what storage you need for this low flow augmentation during this period.

One of the basic problems we had with Allatoona is our period of record. We could provide 56,000, assume for a moment, but we don't know next year or the year after. We might have two drought periods worse than we have even had before, and then we will be right back in the same boat.

MR. STEIN: Here is what I'm trying to get at, Mr. Ruland, and I don't want to assume that the conferees are going to accept any of these recommendations--

MR. RULAND: Right.

MR. STEIN: --but having worked with the Corps of Engineers for years--we have gone before the same Committee, the Public Works Committee, for the past 25 years--I think what I'm trying to get is a feeling if we are going to work together to find the easiest ways to work. If a request from the Secretary of the Interior is to come to you to provide additional acre feet of storage, would it be easier for you to work with it if we had considered 56,000, or another figure or do you want that left a little open?

How would you prefer that? And I am talking just from a technical point of view. Do you think it would be better to put a figure and kick this off or leave it open?

MR. RULAND: I believe it would be better to come with the flow requirements that are required during these periods than it would be for a lump sum storage figure.

MR. STEIN: I think we can adjust the flow requirement or the one there. I would hate to get into possibly a controversy over a technicality about a storage figure. As for myself, I recognize the Corps as the experts on the storage figure. When you people said that this is what you need for storage, well, I have been defending that and arguing that for years. Your're the technical experts on that.

MR. RULAND: It would be much better for the required flows than just the storage.

MR. THOMAN: I have a question, Mr. Ruland. Can you amplify on the reregulating structure below Carters?

MR. RULAND: Well, the reregulated structure below Carters is basically the pump storage unit which is going in there. At off-peak times, they will pump the waters back to Carter.

But in the reregulating structure, we can make releases from the reregulating structure. We can hold back during the week and release this water to fill in the weekend trough.

This will be dependent upon the travel time from the reregulation structure down to the Rome area, and in order to catch the low trough point from Allatoona, this is basically what you--

MR. THOMAN: That was the question, but did I understand you to say that this might satisfy all the flow requirements--

MR. RULAND: No, it will--

MR. THOMAN: --or only a portion?

MR. RULAND: We feel right now it will be satisfactory for a portion. We haven't finished our study to the point where we can tell exactly how much we can furnish.

It is dependent upon the pump storage and how much water they get back out of the reregulation structure.

MR. THOMAN: Fine. Thank you very much.

MR. STEIN: Thank you, Mr. Ruland.

MR. THOMAN, I would next like to call on Mr. Tom Wigglesworth, Chief of the Division of Power Operations of the Southeastern Power Administration of the Department of the Interior in Elberton, Georgia.

MR. THOMAS H. WIGGLESWORTH: Members of the conference, ladies and gentlemen: I am Thomas Wigglesworth. I represent the Southeastern Power Administration, the agency charged with responsibility for marketing the power from the Crops of Engineers reservoir projects in the Southeast.

Although the Corps of Engineers designed and constructed the Allatoona project and now operates and maintains the project, and although it is building and will operate to maintain the Carters project, I believe that the agency that would be most affected by a change in the schedule of releases of water from these reservoirs is the Southeastern Power Administration.

That is, we are affected because we are responsible for delivering the power under the contracts that we have made for power from these projects. It appears that the proposal at this time is that the Georgia Kraft Company, which is contributing about 80 percent of the B. O. D. present at the state line, is to be permitted to continue releasing this same quality of B.O.D. to the river.

The Georgia Power Company which is contributing heat to the river at its Plant Hammond is to be permitted to continue this contribution of heat. It also appears that there is some possibility that it may be permitted to add a substantially greater amount of heat from additional units.

This would substantially increase the temperature of the water in the river and result in a lower dissolved oxygen content.

In order to overcome this deterioration in water quality, it is proposed to call upon the Allatoona project or the Carters project to release water to further augment the flows on a schedule dictated by water quality considerations to the detriment of the power operation of the projects.

It is estimated that the loss in power revenues resulting from the revised release schedule would be $80,000. I must question this estimate, and I question it not because I have a more accurate figure, but because I believe that the estimate was made without complete knowledge of all the facts necessary to make a proper estimate.

As far as I know, I think the Southeastern Power Administration is the only agency having knowledge of all of these facts. We have not made an estimate.

We have not supplied information on these facts to permit anyone else to make an estimate. Therefore, I suspect that although the $80,000 may be correct, it's possible that it may be less or greater than the actual loss in power revenues involved.

I believe also that the idea that water quality should be charged only with the loss in power revenues is a basic mistake. The cost of the Allatoona project is now allocated to flood control and power.

These were the functions of the project at the time it was constructed. If the operation of the project is to be altered to provide for water quality control, this should be recognized as a primary function of the project and costs should be allocated to this function along with the other two functions to which costs are now allocated.

If costs are allocated on this basis, the charge of the water quality control may well be in the order of several hundred thousand dollars rather than the $80,000 which is estimated for the loss in power revenues.

It should be recognized also that in such a reallocation that it would be necessary to take into consideration the substantial benefits which are already being supplied by this project; the flows which are provided by this project are substantially increased over those which prevailed before the project was constructed.

Likewise, there is a substantial reduction in temperature of the water that is released from the reservoir, this helps out the situation in cooling water.

The Georgia water quality standards call for secondary treatment of municipal sewage and equivalent treatment of industrial wastes. Acceptable secondary treatment achieves B.O.D. reductions of 85 percent or greater. It would seem that equivalent treatments for industrial wastes should achieve at least 85-percent reduction.

I understand that the reduction presently achieved by the Georgia Kraft Company is about 70 percent. It would appear that before it is attempted to solve the situation by increasing the flows in the river at public expense that it would be proper that the polluters of the river do all that they could to reduce the pollutants introduced into the stream.

The Southeastern Power Administration is not opposed to use of reservoirs for water quality control. In fact, we recognize that this is one of the most important functions of such reservoirs for the future, but we do not believe that before these reservoirs are devoted to this purpose, that everything possible should be done to clean up the pollution at the source. Thank you.

MR. STEIN: Thank you. Are there any comments or questions?

MR. CROCKETT: None.

MR. STEIN: Mr. Wigglesworth, as I understand, the development of this, of the report here -- I don't know that your statement is different than this, but if we are going to have expansion of this valley, we are going to need both, and it seems to me that on the time factor, if this assumption is correct, that we are going to have both. What's the argument against starting in both directions at the same time, both on the water management and the improvement of the treatment?

MR. WIGGLESWORTH: One thing, this modification of the operation of the reservoir project would be a cost that would fall upon primarily -- primarily fall upon the Southeastern Power Administration as the agency that is selling the power, and we are not responsible for the pollution.

In fact, I believe that these reservoirs have contributed to water quality. As I stated, there is an increase in the flow provided by the reservoirs. There is also a temperature benefit resulting from water coming from the bottom of these reservoirs.

And I think before we are asked to pay the cost of this water quality control, everything should be done by those who are introducing pollution into the water.

MR. THOMAN: Mr. Wigglesworth, assume for a minute that this 56,000 acre feet, assuming that is correct, it may or may not be at this moment, were allocated by Congressional authorization to low flow augmentation, how does this affect your long-term contracts for delivery of power?

Would it have a profound effect on it, little effect or what?

MR. WIGGLESWORTH: It would have a substantial effect upon the contracts that we have at the present time. I won't contend that these contracts can't be changed.

The contracts that we have in effect are for a period of five years from the present. At the end of the five-year time, we have the ability to revise these contracts.

If the operation of these reservoirs is changed as authorized by the Congress, and there is a reallocation of cost so that the cost of this operation will not fall upon our operation, then I would have no objection to it.

MR. HOWARD: I understand, Mr. Wigglesworth, that they have a project now, the Corps of Engineers--to destratify Allatoona--and one of the reasons behind that, of course, is to take care of the problem of oxygen-depleted water being discharged.

Now, that's a water quality factor that we have to consider, so if you do discharge cooler water from these reservoirs, but you also discharge a water that is depleted in oxygen, so it isn't a complete net gain to have a reservoir.

MR. WIGGLESWORTH: This is a disagreement that I have had with the Federal Water Pollution Control Administration for sometime about whether the reservoir should be destratified or not.

If you destratify the reservoir and you get, as you say, adequate oxygen for discharges, you're also going to increase the temperature of the water. We have got a temperature problem here in this river, and if you increase the temperature of this water 10 or 20 degrees, as you may well do by mixing the water in the reservoir, you're going to lose the benefit of what you presently have on lowering of temperature. In commenting on the state water standards, our agency consistently took the position that there ought to be provision for a reaeration zone below or downstream from each of these reservoirs that does provide substantial temperature benefits in the water it releases by its stratification.

MR. HOWARD: Did you make any statement at our hearings?

MR. WIGGLESWORTH: No, we didn't make any statement at the hearings. These comments were submitted to the Federal Water Pollution Control Administration prior to the time that your standard was accepted.

MR. HOWARD: Thank you.

MR. STEIN: Thank you. Are there any other comments?

MR. THOMAN: No other questions.

MR. STEIN: Thank you, Mr. Wigglesworth. We certainly appreciate your coming.

MR. THOMAN: I have no other indications that any other Federal agencies wish to make a statement, although several of them are represented here.

If any other Federal agency wishes to make a statement, I would appreciate your coming forward now. If not, Mr. Chairman, that will complete the Federal part.

MR. STEIN: We will go on to Mr. Howard for Georgia.

MR. HOWARD: Mr. Chairman, it is a pleasure to welcome you to Georgia once again, even at a conference. Glad to have you. Glad to work with you in trying to solve this complex problem, critical problem.

We have a statement to make in regard to the report. We would also like to give you a brief progress report on what has been done on the Coosa River to improve the quality of the water.

We have reviewed the FWPCA report of December 1967, which relates to the critical stretch of the Coosa River between Rome Kraft and the Alabama line.

While we feel that the abatement program now being completed may accomplish the recommendations of the 1963 conference, we would concur that flow augmentation is needed to provide some factor of safety. It is our feelings that steps should be taken immediately to obtain the augmentation by some means so as to have it available during the critical period of next late summer; and during the same period, the river should be subjected to intensive surveys to obtain data upon which we'll judge the adequacy of the present program and future needs.

Now, I would like to give you--I won't read this whole report, but I will give you part of it and submit it for the record.

We have a table showing all of the projects cited at the 1963 conference, plus other polluting problems that we have unearthed since we started operations in 1965.

Since the first session of the Coosa River System Conference in 1963, Georgia communities in the basin have made very significant progress in water pollution abatement.

All of the communities cited in the original Federal report as being major sources of interstate pollution have completed, or placed under construction adequate secondary treatment plants.

During the past year, Rome placed a six-million gallons per day high-rate trickling filter plant into operation. As a cooperative endeavor with local industries, both Summerville and Trion have adequate treatment facilities under construction.

Georgia has formulated a basinwide pollution abatement program which includes numerous communities which were not cited at the first session of the Coosa River Conference.

This was done in order to maintain adequate water quality in the intrastate streams and, additionally, to insure that established interstate stream standards could be maintained.

Nearly all of the communities in the basin without adequate treatment facilities have completed, or placed under construction or have programmed adequate treatment facilities.

Since 1963, six communities have completed adequate treatment facilities and five communities have placed treatment facilities under construction.

Some eight communities with existing unsatisfactory discharges have programmed adequate treatment and at least six communities have proposed new sewer systems with adequate treatment.

At least two communities with existing unsatisfactory waste discharges are presently formulating programs for adequate treatment. We have some tables attached to this report that I won't read now, but will be in the report.

MR. STEIN: Without any objection, that will appear as if read. (See pages 71 through 89).

MR. HOWARD: Cooperative ventures with other local contributors of pollution have been implemented in a number of communities. Of significant importance is the outstanding spirit of cooperation generally shown between municipalities and their local industrial citizens.

Examples of this include Summerville, Trion, Dalton, Canton, Chatsworth, Ellijay and Calhoun. You will note that there are a lot of towns that were not involved on the Coosa, but towns that are on tributaries that belong to the Coosa River System, and they are intrastate streams.

The city of Cave Spring and the Georgia School for the Deaf entered into a cooperative endeavor to plan joint facilities to effect pollution abatement of Little Cedar Creek.

Several counties have recognized the importance and significance of adequate sewer systems and proper treatment of wastewater. Cobb, Floyd and Polk Counties have formulated programs for sewering more densely populated areas in watersheds contributing to the Coosa River System.

For Georgia to continue its progressive industrial and population development, more joint ventures and county systems are not only desirable but are considered essential.

In abating pollution in the Coosa River System, Georgia communities have already spent approximately $7 million and have committed or programmed approximately $26 million.

These expenditures represent costs for plants, outfalls, interceptor sewers, lift stations and related facilities which are necessary for adequate waste treatment; lateral and service sewers and similar work are not included in these cost figures.

These expenditures represent adequate treatment for about 50 million gallons per day of wastewater with an approximate population equivalent of 600,000.

Indeed, Georgia communities have demonstrated--on a voluntary basis for the most part--outstanding progressive and responsible action in maintaining adequate water quality in streams of the Coosa River System.

We wish to assure the Federal Water Pollution Control Administration and our good friends in Alabama that Georgia will continue its vigilance to insure that waters entering Alabama will be of adequate quality to meet established stream standards.

Both Georgia and Alabama can enjoy the advantages and benefits of an abundance of high quality water for the continued growth and prosperity which both states have enjoyed over the past 20 years.

(Following is the complete text of the "Report on Pollution Abatement Progress of Georgia Communities in the Coosa River Basin", prepared April 1968, by the Georgia Water Quality Control Board, Atlanta, Georgia.)

COOSA RIVER SYSTEM

POLLUTION ABATEMENT PROGRESS OF GEORGIA COMMUNITIES

April 11, 1968

Since the first session of the Coosa River System Conference in 1963, Georgia communities in the basin have made very significant progress in water pollution abatement. All of the communities cited in the original Federal report as being major sources of interstate pollution have completed, or placed under construction, adequate secondary treatment plants. During the past year, Rome placed a 6.0 MGD high rate trickling filter plant into operation. As a cooperative endeavor with local industries, both Summerville and Trion have adequate treatment facilities under construction. The attached Table (Part I) gives a brief status report on each of the aforementioned communities.

Georgia has formulated a basin-wide pollution abatement program which includes numerous communities which were not cited at the first session of the Coosa River Conference. This was done in order to maintain adequate water quality in the intrastate streams and, additionally, to insure that established interstate stream standards could be maintained.

Nearly all of the communities in the basin without adequate treatment facilities have completed, or placed under construction or have programmed adequate treatment facilities. Since 1963, six (6) communities have completed adequate treatment facilities and five (5) communities have placed treatment facilities under construction. Some eight (8) communities with existing unsatisfactory discharges have programmed adequate treatment and at least six (6) communities have proposed new sewer systems with adequate treatment. At least two (2) communities with existing unsatisfactory waste discharges are presently formulating programs for adequate treatment. The attached tables gives a brief resume of progress at each community.

Cooperative ventures with other local contributors of pollution have been implemented in a number of communities. Of significant importance is the outstanding spirit of cooperation generally shown between municipalities and their local industrial citizens. Examples of this include Summerville, Trion, Dalton, Canton, Chatsworth, Ellijay and Calhoun. The City of Cave Spring and the Georgia School for the Deaf entered into a cooperative endeavor to utilize joint facilities to effect pollution abatement for Little Cedar Creek. Several counties have recognized the importance and significance of adequate sewer systems and proper treatment of wastewater. Cobb, Floyd, and Polk Counties have formulated programs for sewering more densely populated areas in watersheds contributory to the Coosa River System. For Georgia to continue its progressive industrial and population development, more joint ventures and county systems are not only desirable but are considered necessary.

In abating pollution in the Coosa River system, Georgia communities have already spent approximately 7.0 million dollars and have committed or programmed approximately 26.0 million dollars. These expenditures represents costs for plants, outfalls, interceptor sewers, lift stations, and related facilities which are necessary for adequate waste treatment; lateral and service sewers and similar work are not included in these cost figures. These expenditures represent adequate treatment for about 50.0 million gallons per day of wastewater with an approximate population equivalent of 600,000.

Indeed, Georgia communities have demonstrated -- on a voluntary basis for the most part -- outstanding progressive and responsible action in maintaining adequate water quality in streams of the Coosa River System. We wish to assure the Federal Water Pollution Control Administration and our good friends in Alabama that Georgia will continue its vigilance to insure that waters entering Alabama will be of adequate quality to meet established stream standards. Both Georgia and Alabama can enjoy the advantages and benefits of an abundance of high quality water for the continued growth and prosperity which both States have enjoyed over the past twenty years.

GEORGIA SEWERAGE SYSTEMS DISCHARGING TO THE COOSA RIVER SYSTEM

PART I - SYSTEMS CITED IN FEDERAL REPORT OF JANUARY, 1963

COMMUNITY OR MUNICIPALITY	PRESENT TREATMENT	RECEIVING STREAM	PRESENT STATUS AND COMMENTS
Trion & Riegel Textile Co.*	None	Chattooga River	5.0 MGD Aerated pond system under construction and scheduled for completion by December 1968. Design for approximately 0.3 MGD sanitary sewage and 4.75 MGD ind. waste from Riegel Textile Company.
Summerville*, including: Montgomery Knitting Co. Summerville Mfg. Co. Georgia Rug Mill	None	Chattooga River	2.0 MGD Activated sludge plant (extended aeration) with effluent disinfection 80% complete; scheduled completion - June 1968; approximately 1.0 MGD domestic waste and 1.0 MGD industrial wastes involved.
Berryton - Harriett & Henderson Cotton Mills	None	Tributary to Chattooga River	Program for adequate treatment being formulated.
Rome*	Secondary + effluent CL_2 (see comments)	Coosa River	6.0 MGD High rate trickling filter plant completed in February 1967. City presently discharges some raw sewage but work under construction and programmed provides for treating all sewage by 1970.
Floyd County - Lindale Area*	Secondary	Silver Creek Coosa River	Existing 0.4 MGD low rate trickling filter plant considered generally adequate.

*Refer to attached correspondence

April, 1968

GEORGIA SEWERAGE SYSTEMS DISCHARGING TO THE COOSA RIVER SYSTEM
PART II - SYSTEMS IN BASIN WHICH WERE NOT INCLUDED IN FEDERAL REPORT OF JANUARY, 1963 BUT WHICH HAVE BEEN INCLUDED IN GEORGIA'S ABATEMENT PROGRAM

COMMUNITY OR MUNICIPALITY	PRESENT TREATMENT	RECEIVING STREAM	PRESENT STATUS AND COMMENTS
Blue Ridge	Primary (Imhoff tank)	Cherry Log Creek to Coosawattee River - Oostanuala River	Program for adequate secondary treatment being requested by GWQCB.
Ellijay	None	Coosawattee River - Oostanaula River	Adequate treatment facilities programmed and construction anticipated during 1969.
Chatsworth*	Primary	Holly Creek to Conasauga River - Oostanaula River	0.75 MGD Activated sludge plant (extended aeration) with effluent disinfection under construction; estimated completion January 1969. Both domestic and industrial waste being treated.
Dalton	Secondary for appr. 70% of waste (see comments)	Carpenter Creek to Conasauga River - Oostanaula River	Adequate treatment being programmed for all domestic and industrial wastes (Design: 19.5 MGD ind. waste and 2.5 MGD domestic waste). Presently, about 4.5 MGD sewage and ind. waste discharged raw; about 10 MGD treated by trickling filter - activated sludge plant.
Menlo	Secondary	Tributary to Alpine Creek - Chattooga River	0.85 Acre wastewater stabilization pond for 13,000 GPD is considered adequate subject to minor improvements. The pond is operated by City but serves a local industry and housing project only. Engineering report completed for sewering City.

*Refer to attached correspondence

April, 1968

GEORGIA SEWERAGE SYSTEMS DISCHARGING TO THE COOSA RIVER SYSTEM
PART II - SYSTEMS IN BASIN WHICH WERE NOT INCLUDED IN FEDERAL REPORT OF JANUARY, 1963 BUT WHICH HAVE BEEN INCLUDED IN GEORGIA'S ABATEMENT PROGRAM

COMMUNITY OR MUNICIPALITY	PRESENT TREATMENT	RECEIVING STREAM	PRESENT STATUS AND COMMENTS
Cedartown*	Inadequate Secondary	Cedar Creek - Coosa River	Programmed construction, to commence by July 1968, will provide adequate treatment by renovation and expansion of existing trickling filter plant, which presently only affords negligible treatment.
Cave Spring and Ga. School for the Deaf*	Secondary + effluent CL_2	Little Cedar Creek - Coosa River	0.22 MGD Activated sludge plant (extended aeration) recently placed into operation. Treatment now adequate.
LaFayette	Secondary	Chattooga River	Existing 1.0 MGD High rate trickling filter plant, completed in 1965, is generally adequate.
Cartersville*	None	Etowah River	1.2 MGD Primary treatment plant with effluent disinfection scheduled for operation by May 1968; secondary treatment scheduled by 1970.
Canton	None	Etowah River	1.9 MGD Extended aeration plant with effluent disinfection under construction and scheduled for completion by August 1968. Treatment for 0.4 MGD domestic waste and 1.5 MGD industrial waste provided.

*Refer to attached correspondence

April, 1968

GEORGIA SEWERAGE SYSTEMS DISCHARGING TO THE COOSA RIVER SYSTEM
PART II - SYSTEMS IN BASIN WHICH WERE NOT INCLUDED IN FEDERAL REPORT OF JANUARY, 1963
BUT WHICH HAVE BEEN INCLUDED IN GEORGIA'S ABATEMENT PROGRAM

COMMUNITY OR MUNICIPALITY	PRESENT TREATMENT	RECEIVING STREAM	PRESENT STATUS AND COMMENTS
Dawsonville	Secondary	Flat Branch - Etowah River	Present 0.05 MGD Waste stabilization pond, completed in 1965, is presently adequate.
Jasper	Primary (2 Imhoff tanks)	Branch tributary to Etowah River	Adequate secondary treatment being programmed; Fed. grant funds applied for.
Kennesaw (Cobb County)	Secondary Effluent CL_2	Noonday Creek Etowah River	Existing 0.3 MGD low rate trickling filter plant is presently adequate
Acworth	Secondary Effluent CL_2	Allatoona Creek - Etowah River	Existing 0.4 MGD Activated sludge plant, completed in 1966 is presently adequate.
Dallas	Primary (2 Imhoff tanks)	Tributaries to Etowah River (Beaver Creek & Pumpkinvine Creek)	Engineering study underway to provide adequate treatment. The City has been placed on notice for a schedule by GWQCB.
Rockmart	Secondary	Euharlee Creek - Etowah River	Existing 0.6 MGD High rate trickling filter plant treatment is under evaluation for adequacy.
Calhoun *	None	Oostanaula River	Bids on treatment facilities anticipated by late 1968. Treatment to be provided for both domestic and industrial waste.
Adairsville *	Primary (Imhoff tank)	Oothkallooga Creek Oostanaula River	Construction plans and specs. on adequate treatment nearing completion; construction anticipated by July 1968.

*Refer to attached correspondence

GEORGIA SEWERAGE SYSTEMS DISCHARGING TO THE COOSA RIVER SYSTEM
PART II - SYSTEMS IN BASIN WHICH WERE NOT INCLUDED IN FEDERAL REPORT OF JANUARY, 1963 BUT WHICH HAVE BEEN INCLUDED IN GEORGIA'S ABATEMENT PROGRAM

COMMUNITY OR MUNICIPALITY	PRESENT TREATMENT	RECEIVING STREAM	PRESENT STATUS AND COMMENTS
Lyerly Elementary School Lyerly, Georgia	Secondary + effluent CL_2	Mosteller Creek - Chattooga River	6000 GPD Activated sludge plant (extended aeration) is considered adequate subject to operational and maintenance improvement.

Notes:

1. Minor wastewater contributors, such as schools, trailer parks, subdivisions and the like, have not been listed except those located near the Alabama line. However, all known wastewater sources of consequence will be included in Georgia's abatement program.

2. Treatment adequacy is subject to continuing evaluations by GWQCB including the necessity for effluent disinfection.

April, 1968

GEORGIA SEWERAGE SYSTEMS DISCHARGING TO THE COOSA RIVER SYSTEM

PART III-PROPOSED NEW SEWER SYSTEMS WITH SECONDARY TREATMENT

COMMUNITY OR MUNICIPALITY	PROPOSED TREATMENT	RECEIVING STREAM	PRESENT STATUS AND COMMENTS
Ball Ground	0.07 MGD Activated sludge (Extended Aeration)	Tributary to Etowah River	Engineering report completed; Federal grant applied for.
Cobb County (Noonday Creek Watershed)	1.0 MGD Activated Sludge (1st. phase)	Noonday Creek - Etowah River	Engineering report completed; construction tentatively programmed for 1970. Proposed project would replace the several existing plants (mostly operated by Cobb County) serving schools, subdivisions, and the like.
Floyd County* - Shannon area	0.17 MGD Activated sludge (Extended Aeration)	Tributary to Oostanaula River	Engineering report completed; financing underway. Proposed system would initially serve Shannon Mill Village and environs.
Holly Springs	0.12 MGD Activated sludge (Extended Aeration)	Tributary to Etowah River	Engineering report completed.
Polk County - Aragon area	0.12 MGD Secondary (Type Pending)	Tributary to Etowah River	Engineering report completed; Federal grants applied for. Note: Aragon Mill Village presently discharges some raw sewage.
Woodstock	Secondary (Type Pending)	Tributary to Etowah River	Engineering report completed.

* Refer to attached correspondence

April, 1968

J. P. BASKIN & ASSOCIATES
ENGINEERS AND SURVEYORS
P. O. BOX 101
ROME, GEORGIA

March 28, 1968

Mr. R. S. Howard, Jr.
Executive Secretary
State Water Quality Control Board
47 Trinity Avenue, S.W.
Atlanta, Georgia 30334

Dear Mr. Howard:

As requested in your letter of March 20, 1968, to the Honorable Mayor and Council of the City of Adairsville, we submit herewith, a resumé of progress on adequate treatment of wastes to date. The City discharges an effluent to a tributary of the Coosa River System and we hope to have under Contract by June 15, 1968, adequate treatment, the design of which has been tentatively approved by your Engineers.

Your Mr. Bates and I met in conference on Friday, March 22, 1968 and reviewed plans for the project. His comments and suggestions in regard to proposed changes in plans should be completed and re-submitted for final approval within the next week or ten days.

A meeting with bonding representatives will be arranged after final approval of plans and specifications have been received, and after his assurance of a difinite date when the City may expect the required amount of money to be in their hands. The project will then be advertised for bids. In my opinion, bids should be received by June 1, 1968, with work beginning on or about June 15, 1968.

Sincerely,

J. P. Baskin

J. P. Baskin

JPB/da

c.c. to: Hon. W. E. Penfield, Mayor
Adairsville, Georgia

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MAR 29 1968
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WATER QUALITY
CONTROL

OFFICE OF WIEDEMAN AND SINGLETON, ENGINEERS
1789 PEACHTREE ROAD, N.E. • ATLANTA, GEORGIA 30309

RECEIVED
FEB 29 1968
GEORGIA
WATER QUALITY
CONTROL

February 28, 1968

Mr. Bryan W. Chesson, P. E.
Regional Construction Grants
Program Representative
Federal Water Pollution Control Administration
Southeast Region
1421 Peachtree Street, N. E., Suite 300
Atlanta, Georgia 30309

Re: Sewerage System Improvements
Project No. ARC-WPC-GA-159

Dear Mr. Chesson:

Reference your letter of February 21, 1968 to Mayor Frank M. Dickinson regarding subject project, we wish to advise as to the present status of our work on this project.

The City formally authorized this office on August 31, 1967, to proceed with the design of the contract drawings. We had had field surveys underway prior to that date. All field work has now been completed on both the plant site and the interceptor sewers. Plant site topography is being plotted and design of the sewage treatment plant will commence in the immediate future. We are completing the design of the interceptor sewers and plans and specifications covering this phase of the work should be submitted to the Georgia Water Quality Control Board for review and approval by that agency and yours within 60 days. We anticipate submitting the final plans and specifications on the sewage treatment plant for review and approval on or about September 1, 1968.

We propose to advertise for bids on the interceptor sewers as soon as approval of the plans and specifications is received from your office.

Therefore, on behalf of the City of Calhoun, we request an extension of time to May 1, 1968, for submitting to you the plans and specifications on the first phase of this work.

Yours very truly,
WIEDEMAN AND SINGLETON

Wm. J. Greene, Jr.

WJG-Jr:ms
cc: Georgia Water Quality Control Board
Mr. Frank M. Dickinson, Mayor
Mr. James S. Owens, City Supt.

COPY

CITY OF CARTERSVILLE
CARTERSVILLE, GEORGIA

April 3, 1968

Mr. R. S. Howard, Jr.
Executive Secretary
State Water Quality Control Board
47 Trinity Avenue, S. W.
Atlanta, Georgia 30334

Dear Mr. Howard:

Attendance at another meeting previously scheduled prevents my attending your conference in Rome on April 11.

In response to your request for a report on the construction of the Cartersville Primary Treatment Plant, it is my understanding that we will be able to make a final inspection on the plant possibly the last of this month or certainly early in May.

The planning for construction of sewer main extensions and the trunk line that will run across the southern portion of the City connecting this southeast area with the treatment plant is now being reviewed. August 1967 the City obtained additional financing for water and sewer construction in the amount of $1,550,000. This money is now invested and we have delayed taking bids on a water treatment plant subject to approval of HUD for a grant request of $500,000. Also, the City is requesting a supplemental grant for this same project from the Appalachian Regional Commission. If these grants are approved, adequate financing will be available to complete our program. I trust this will meet with your approval.

As you know, the City has tried to be cooperative in every aspect of this abatement program, not to mention the expenditures in excess of three million dollars by both the City, State and Federal Agencies; however, it is disturbing to note that in spite of this there are a large number of homes and I believe one industry on

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the west side of Cartersville that has a private sewer system that still pollutes Pettit Creek just north of our new treatment plant.

Thanking you for your consideration of these facts, I remain

Sincerely,

S/S Richard Barton

Richard Barton
City Manager

RB/sm

cc: Mayor & Council

Georgia School for the Deaf

STATE DEPARTMENT OF EDUCATION
JACK P. NIX
STATE SUPERINTENDENT OF SCHOOLS

FRED L. SPARKS, JR.,
SUPERINTENDENT

JOHN L. CAPLE,
PRINCIPAL

CAVE SPRING, GEORGIA 30124

March 26, 1968

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MAR 27 1968
GEORGIA
WATER QUALITY
CONTROL

Mr. R. S. Howard, Jr., Executive Secretary
State Water Quality Control Board
47 Trinity Avenue, S. W.
Atlanta, Georgia 30334

Re: Reconvened Conference on Interstate Pollution, Coosa River System

Dear Mr. Howard:

First of all, thank you for coming to Rome to speak to the Rome Rotary Club on State Water Quality Control. Thanks. It was good to meet a Clemson Tiger, my friend. I hope you will come to see us again.

The meeting on Thursday, April 11, at the Rome Civic Center on the Coosa River System is of great interest to us. On April 19 Cave Spring will have the Governor to dedicate the joint sewage disposal plant and the joint water pollution control system; indeed, the environmental sanitation and health system of Cave Spring and the Georgia School for the Deaf. This is to advise all that we have cleaned up Little Cedar. We would like very much to encourage others to do the same, and follow the example set by the joint use of city, state, and federal funds in cleaning up Little Cedar; let it spread not only throughou the state, but interstatewise also.

I am sorry I will not be able to be at the April 11 meeting, because I am going to the Master's Golf Tournament in Augusta. I will be with you in spirit, and I am asking Paul Williams, of Williams, Sweitzer and Barnum to represent us, and that the Mayor and/or Council Members also represent us in this expression of appreciation on the Conference on Interstate Pollution of the Coosa River System. Actually, Dr. George Perkins of the Floyd County Health Department has been interested in Cave Spring and our treatment system. We express our appreciation to all who have been a part of helping us establish the first Appalachia project of cleaning up Little Cedar through a joint city and school project using city, state, and federal funds.

Keep up the good work. Our appreciations.

Sincerely yours,

Fred Sparks

Fred L. Sparks, Jr.
Superintendent

FLS:vb

cc: The Honorable Dennis Mason and Council Members
Mr. Paul Williams
Dr. George Perkins

84

RBH

WIEDEMAN AND SINGLETON
ENGINEERS
1789 PEACHTREE ROAD, N. E.
ATLANTA, GEORGIA 30309
TELEPHONE 876-5862
AREA: 404

PARTNERS:
C. E. DRUMMOND, JR.
WM. J. GREENE, JR.
R. C. KAUFFMAN
JOHN H. WIEDEMAN
T. W. WIEDEMAN

ASSOCIATES:
L. H. CLOUSER
G. C. HORNSBY
C. Q. NEVITT
C. S. WHITE
W. E. WILLIAMS

March 29, 1968

RECEIVED
APR 1 1968
GEORGIA
WATER QUALITY
CONTROL

Mr. R. S. Howard, Jr.
Executive Secretary
State Water Quality Control
47 Trinity Avenue, S. W.
Atlanta, Georgia 30334

Dear Mr. Howard:

Mr. Robert Veal, City Manager of Cedartown, has asked us to inform you of the current status of Cedartown Project ARC-WPC-GA-166.

Our present schedule is to submit to your office for approval within 30 days the plans and specifications for this project. It is our understanding that the City will advertise for bids immediately upon notification from the FWPCA to proceed.

Regarding your letter of March 19, 1968 concerning the second session of the pollution conference on the Coosa River System, to be held April 11, 1968, it is not the intention of the City to have a representative present at the meeting. However, if you think it advisable, a representative from our office will be glad to attend the Conference to furnish any information which may be requested.

Very truly yours,

WIEDEMAN AND SINGLETON

W. E. Williams

WEW/rch

WIEDEMAN AND SINGLETON
ENGINEERS

PARTNERS:
C. E. DRUMMOND, JR.
WM. J. GREENE, JR.
R. C. KAUFFMAN
JOHN H. WIEDEMAN
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C. S. WHITE
W. E. WILLIAMS

March 27, 1968

Mr. R. S. Howard, Jr., Executive Secretary
Georgia Water Quality Control Board
609 State Office Building
47 Trinity Avenue, S. W.
Atlanta, Georgia 30334

Re: Sewage Treatment Facilities
Chatsworth, Georgia
Project No. WPC-GA-151

Dear Mr. Howard:

Reference your letter of March 20, 1968 to the Honorable Mayor and Council of the City of Chatsworth pertaining to the reconvening conference on Interstate Pollution of the Coosa River System. we wish to advise as follows, on behalf of the City, as to the status of the water pollution control construction work now in progress at Chatsworth.

1. The construction of the interceptor sewer is approximately 50% complete, with the work being completed about July 1, 1968.
2. The construction of the sewage treatment plant is slightly more than 10% complete, with the scheduled completion date being December 26, 1968.

Yours very truly,

WIEDEMAN AND SINGLETON

Wm. J. Greene, Jr.

WJG-Jr:ms

cc: Mr. Thomas W. Greeson
Mayor, City of Chatsworth

Mr. Judson F. Vick
Supt., Water Department

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MAR 28 1968
GEORGIA
WATER QUALITY
CONTROL

86

Floyd County, Georgia
BOARD OF COMMISSIONERS OF ROADS AND REVENUE
ROME, GEORGIA

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March 27, 1968

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MAR 28 1968
GEORGIA
WATER QUALITY
CONTROL

Mr. R. S. Howard, Jr.
Executive Secretary
State Water Quality Control Board
47 Trinity Avenue, S. W.
Atlanta, Georgia, 30334

RE: Reconvened Conference on
Interstate Pollution
Coosa River System

Dear Sir:

In reference to your letter of March 19 requesting a status report on the sewerage systems at Lindale and in the Shannon area, we are pleased to submit the following report.

Lindale - No present plans to change the facility operations at this location.

Shannon - Plans and specifications expected to be completed within next two (2) months on new treatment plant. Anticipate receiving bids for construction in July.

As the Coosa Valley Planning and Development Commission has launched a comprehensive study of sewerage requirement within its service area, no programs for providing additional sewerage facilities or services are contemplated pending completion of this comprehensive survey.

Floyd County will have representatives in attendance at the April 11 conference.

Sincerely,

FLOYD COUNTY

Richard L. McCullough

Richard L. McCullough,
Clerk

RLM:sb
CC: Williams, Sweitzer & Barnum

City of Rome
Georgia

BRUCE HAMLER
CITY MANAGER

March 25, 1968

RECEIVED
MAR 27 1[illegible]
GEORGIA
WATER QUALITY
CONTROL

Mr. R. S. Howard, Jr.
Executive Secretary
State Water Quality Control Board
47 Trinity Avenue, S. W.
Atlanta, Georgia 30334

Re: Reconvened Conference
on Interstate Pollution
Coosa River System

Dear Mr. Howard:

We plan to attend the Pollution Conference scheduled for Rome, Georgia April 11, 1968.

Since the convening of the first conference we feel that the City of Rome has made considerable progress in solving our part of the area wastewater problem. In February, 1967 we placed in operation a complete 6 M.G.D. treatment plant of the high rate trickling filter type. This plant has been in operation for over a year now and is doing a fine job. Plant construction costs exceeded $1,250,000.

We have installed interceptor trunk lines which are serving about 35% of our total area. We also have under construction and nearing completion additional trunk lines and lift stations which will bring the total area served to about 60%.

Our engineers, Robert and Company, Inc., are working on the plans and specifications for all other trunk lines and lift stations which will serve 100% of our area when completed. Our goal for completion of our entire system is 1970.

We appreciate your interest and complete cooperation in helping us with our wastewater problem and we look forward to seeing you at the Conference on April 11, 1968.

Sincerely,

CITY OF ROME

Bruce Hamler

Bruce Hamler
City Manager

BH:ag
cc: Robert & Company, Inc.
Water & Sewer Committee, City Commission

WBW

88

WILLIAMS, SWEITZER AND BARNUM, INC.
ENGINEERS
ROME, GEORGIA
30161

PAUL C. WILLIAMS
FRED W. SWEITZER, JR.
HERBERT M. BARNUM

P. O. BOX 1386
TELEPHONE 234-0553

March 22, 1968

State Water Quality Control Board
47 Trinity Avenue, S. W.
Atlanta, Georgia 30334

Re: Status of Sewerage Project,
Summerville, Georgia

Gentlemen:

In response to your recent request for information on subject project, we wish to make the following status report:

1. A 2.0 MGD extended aeration treatment facility is under construction. It is now approximately 80% complete, with completion contemplated on or about June, 1968.

2. Outfall, interceptor and collector sewers have been completed.

3. The finished project will provide sewerage to all sewered areas of Summerville and the following industries - Montgomery Knitting Mill, Summerville Manufacturing Co., and the Georgia Rug Mill. The Harriet and Henderson Cotton Mills, located at Berryton, will not be served.

4. The City of Summerville is presently attempting to fund a project for providing sanitary collectors to several unsewered residential areas outside of the City Limits.

We trust that we have fulfilled your request. Please contact us if further information is desired.

Sincerely yours,

WILLIAMS, SWEITZER AND BARNUM, INC.

Herbert M. Barnum, P. E.

HMB/jm

cc: City of Summerville

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MAR 25 1968
GEORGIA
WATER QUALITY
CONTROL

RSH

ROBERT AND COMPANY ASSOCIATES

Engineers

96 POPLAR STREET, N. W. ATLANTA 3, GEORGIA

March 29, 1968

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APR 1 1968
GEORGIA
WATER QUALITY
CONTROL

Mr. R. S. Howard, Jr.
Executive Secretary
State Water Quality Control Board
47 Trinity Avenue, S. W.
Atlanta, Georgia 30334

Re: Reconvened Conference on
Interstate Pollution
Coosa River System
August 11, 1968

Dear Mr. Howard:

At the request of the Mayor and Council of the Town of Trion, Georgia, we are pleased to furnish you a progress report on waste treatment facilities for the Town of Trion and for the Riegel Textile Company as follows:

Award for the construction of an outfall sewer and treatment facilities, as approved by your office, was made to J. W. Meadors and Company, Inc. and contract was executed on December 26, 1967.

The contract time began on February 1, 1968 and the completion date is November 26, 1968.

The Contractor began work on the project early in February and considering the prevailing weather conditions has proceeded at a reasonable rate thereafter.

Barring unforeseeable delays in the delivery of materials and equipment we see no reason why the job should not be completed within the time programmed.

The officials of the Town of Trion will not make a statement at the April 11, 1968 meeting in Rome, Georgia unless called upon.

Yours very truly,

ROBERT AND COMPANY ASSOCIATES

N. M. de Jarnette

N. M. deJarnette
Municipal Department

NMdeJ/mep
cc: Honorable J. C. Woods

MR. STEIN: Are there any comments or questions? That seems like a very active program, and again, I think we would like to commend Georgia and the communities and the industries here for the cooperation on this.

This is an example of state, Federal, municipal and industrial cooperation, because since the conference in 1963, this cleanup program has proceeded in an orderly fashion on the Coosa River Basin. I believe if we were doing this in all the areas of the country, we would be well on the way to pollution control. As far as I can see, this is probably one of the real model areas in showing how a pollution control program should be moving forward. Obviously, this in no small measure is due to Mr. Rock Howard and his group in Georgia, because they have the day-to-day responsibility of moving and keeping this program going, and they certainly have done it.

MR. HOWARD: Mr. Chairman, I would like to have Charlie Starling, Director of Industrial Waste Services, give a brief report on industries cited at the conference and the status of their abatement program. Charlie.

MR. CHARLES STARLING: The industries considered to be significantly involved in the interstate aspect of the Coosa River System are:

(1) Riegel Textile at Trion on the Chattooga,

(2) Montgomery Knitting Company, Summerville Manufacturing Company and Georgia Rug Mill at Summerville on the Chattooga,

(3) New Riverside Ochre Company on the Etowah,

(4) Rome Kraft, Celanese Fibre, Georgia Power Company, and Pepperell Manufacturing Company, discharging into the Coosa or near into its tributaries.

All of the cited industries on the Chattooga are participating with the municipalities in which they are located and where approved treatment facilities are under construction.

On the Etowah, the New Riverside Ochre Company completed its treatment facilities in late 1966. Elimination of the silt load, which formerly originated at New Riverside has had a dramatic effect on the aesthetic quality of the river system, including upper Lake Weiss.

It also appears that the effect has gone far beyond aesthetics, in that restoration of the stream to a somewhat natural condition has permitted the development of normal stream biota, including reaerative algae.

This is demonstrated by an occurrence of last October when, during a period of intense solar radiation, the pH in the Coosa at the Alabama Line increased from its norm of approximately 7.0 to above 10.5, and the D.O. increased from its norm of 6.0 to 8.6 milligrams per liter.

This could have been caused only by algae activity, which would not have occurred under the former turbid conditions of the river.

On the Coosa, Rome Kraft has completed its facilities and is now operating within the requirements of the permit issued.

Celanese Fibre has altered manufacturing processes and provided treatment facilities which reduce the B.O.D. discharge to less than 200 pounds per day from a former 3900 pounds.

Georgia Power Company has installed a diffuser system which appears to have resulted in effective mixing of their heated effluent with the river flow to eliminate stratification.

This applies only to the present heat load from Georgia Power--the matter of heat from the plant expansion is still under discussion with that company.

Pepperell Manufacturing Company has facilities under construction. They are now in the process of arriving at policy decisions which may have a pronounced influence on the quantity and quality of their waste in the future, and consequently, we have agreed to a phased construction program.

The first phase, now in progress, is for the pipelines to accumulate waste at a central point and for the pump structures which will be required in any event.

By June, the policy decision referred to above will have been reached and it will then be determined whether the procedures with the program, plans for which have been approved, are to modify the design to accommodate an altered waste load.

MR. STEIN: Thank you, Mr. Starling. Are there any comments or questions? Thank you very much, sir.

MR. HOWARD: I would like to say, Mr. Chairman, that everything isn't sweet and light with regard to some of our industries; back in 1963, there were several of them that should have moved on faster than they did, and I think with all honesty, we ought to mention that.

I won't embarrass them by naming them, but there are some of them that have been dragging their feet and blaming it on their consulting engineers instead of putting it where it belongs.

MR. STEIN: I was commenting to Mr. Thoman on the progress that you have made since 1963. We, in the Federal agency, think it is very good. I think the progress has been due in large measure to the forthright action that Georgia is taking with the slippages.

I think we have slippages in industries and municipalities and if you let them go you don't have a pollution program going forward. If you take action to see that these slippages don't continue indefinitely and get back on the track, you get it going. I think where we recognize this--this is all the more reason Georgia should be commended on this program because it has met the inevitable foot-dragging in an expeditious manner--as you can see, this program is on the track. To those few who were present when we were here in 1963--I know there are some in the audience--the situation really looks different, really looks different today.

Even the speeches at the conference are different. (Laughter)

MR. HOWARD: We have finally decided we are all on the same side, I think.

MR. CROCKETT: Mr. Starling mentioned some water quality data. I would like to inquire as to the status of monitoring, the monitoring program in the lower Coosa, particularly at the state line.

This may be either you or --

MR. THOMAN: Mr. Traina, would you like to come forward and comment on that.

MR. HOWARD: Do you know, Paul?

MR. TRAINA: There are two monitors, one at the state line and one approximately below Rome Kraft, the one below Rome Kraft --

MR. HOWARD: Mayo's Bar.

MR. TRAINA: Mayo's Bar is the exact point. And both of these are being operated and both giving us data. I can't give you the time they were installed. Maybe some of you other gentlemen here can; but they have been in operation for some years.

MR. HOWARD: Mr. Ledbetter, would you like to come back here and comment on the monitoring system?

MR. HOWARD: Mr. Ledbetter is our Director, Water Quality Survey Service, and it has been his responsibility to work with the FWPCA, the Corps of Engineers and our local Health Departments in setting up a statewide monitoring system.

It has been a very hard job to get together, and we have now begun to operate, and we are going to expand it and improve it as we go along. Mr. Ledbetter, do you want to comment on the Coosa?

MR. J. LEONARD LEDBETTER: Thank you, Mr. Howard. In cooperation with the Federal Water Pollution Control Administration, I have been working with Lee Tebo, who, I believe, is the pollution surveillance chief out of the Athens lab.

They have an older monitor down at the state line at the present which will soon be replaced. That has been operated in cooperation with Georgia Kraft Company. They do the routine maintenance.

We have a monitor at Mayo's Bar, which we are all operating cooperatively, but then we all recognize that you only get a certain amount of information from an automatic monitor, basically, pH, D.O., temperature, maybe conductivity and turbidity; so in cooperation with Mr. Tebo's operation, we have agreed to obtain periodic grab samples to do a rather complete chemical and bacteriological analysis to supplement the information provided by the monitoring which we think will not only be a check on the automatic monitor, but will at the same time give us a more complete picture. This is a part of the continuing monitoring program.

In addition to that, of course, from time to time, as was mentioned earlier, we hope to do some comprehensive studies on some of these streams where we have rather large waste discharges.

MR. TRAINA: I might add, there are biological samples as well collected at that monitor.

MR. STEIN: Mr. Crockett.

MR. CROCKETT: Mr. Wigglesworth, in his presentation, brought up the contribution of cold water by Allatoona and the possibility that this contribution would be lessened by what you're doing with the reservoir now to break up stratification.

I wonder if Georgia has any data on temperature at the Mayo Bar and as it may be related to temperature of other streams in the area on which there are no impoundments -- in other words, has this temperature more or less adjusted itself by the time it reaches Mayo's Bar, or is it still cooler than you would find, let's say, in the Chattooga River or some other similar stream?

MR. LEDBETTER: I don't think we have a complete answer to that, Mr. Crockett, although the information we do have implies that the reach of the stream involved from the Allatoona Dam to Rome is such that the cooler water has warmed back up to the point where it approaches the average ambient temperature.

Not only do we have some information along those lines, but there are a number of other parties that have looked at this factor. The FWPCA, of course, and together with them, the Corps of Engineers, looked at this factor themselves when they were considering this project and they have been obtaining information over the last two or three years -- well, not only temperature, but other water quality data, and I think possibly some of the other industries here, but I don't think we have the exact answer, but we have been monitoring, and we do have information before the project goes into operation, and we will begin to watch it very closely to see if there really is a change.

MR. STEIN: Are there any other questions or comments?

MR. WIGGLESWORTH: May I comment on that point?

MR. STEIN: I don't like to do this, but why don't you come up, Mr. Wigglesworth, and do this? But we will just make an exception this time.

MR. WIGGLESWORTH: I first of all looked into the record to see if I could find any temperature records on the Coosa River itself, and I didn't find any.

But I looked through the reports of the Geological Survey, and they have water quality testing stations at certain points. The best information that I was able to find was in the Cumberland River Basin, and they have taken temperature readings there for a number of years, going back as far as 1950, and extending up to the present time.

There are stations where they take temperature, at Barbourville and Williamsburg. These are both stations upstream from Wolf Creek Reservoir. The Wolf Creek Reservoir is a large reservoir in the upper part of the Cumberland River in Kentucky.

It would compare in size with the Hartwell or Clark Hill Reservoirs that we have then in this area. There is also a temperature station 37, or about 39, miles, I should say, downstream from the Wolf Creek Dam, and there is another temperature station at the mouth of the Cumberland River.

I took from a report of the Geological Survey temperature figures for the streams, and I might read a few of them just to show how the temperature reduction persists in the Cumberland River.

At Barbourville, or Williamsburg, both of which are above the reservoir, for August, the temperatures were around something like 82, 82, 83, 78, 80, 78, 82.

At Burkesville, which I say is 39 miles from the Wolf Creek Dam, the temperatures during the same time will run 61, 57, 58, 58, 56, 56, 56. So you can see that at this distance downstream from the dam, at this particular location, you still have a temperature reduction of at least 20 degrees, and sometimes as much as 30 degrees.

MR. HOWARD: Are you sure there aren't any tributaries in that stretch of 39 miles that might have an effect?

MR. WIGGLESWORTH: The tributaries, if there are any, should cause a rise in temperature.

MR. HOWARD: It doesn't happen in South Georgia, where we have some springs running into some of our main streams.

MR. STEIN: That happens. But you're doing this by analogy -- I don't know. Perhaps -- I have always found, and we have been working on this, that we have to really perfect this monitoring and analysis system. One of the recommendations made by Mr. Howard is that we are going to do an intensive survey. But again, I am always dubious about dealing with river basins on an analogy basis. I have always done this -- I always think each river is sin generis, peculiar unto itself.

When you have an analysis or an analogy, what you're going to ask one industry to do on one river basin and you try to do it to another, -- you have got another problem.

I recognize the thrust of your argument, Mr. Wigglesworth, and maybe the answer is that we really are going to throw cold water on this project, but I wonder if we can ask Mr. Traina--I think probably he may have some figures on the effective temperature in this basin. Mr. Traina.

MR. TRAINA: During the 1962 survey upon which the first conference was based, there was data collected on temperature. The average temperature coming out of the Allatoona was 22 degrees Centigrade.

MR. HOWARD: How much?

MR. STEIN: Twenty-two.

MR. TRAINA: The temperature right above Rome was approximately 26 degrees Centigrade, 25 to 26 degrees Centigrade. The average then in the Chatooga River, which is a stream similar in terms of geographic area, was also 25 to 26 degrees Centigrade.

So I think, based on that, we can make a judgment or an evaluation that the stream does return to ambient temperature by the time it gets to Rome, irrespective of what the temperature is coming out of the Allatoona.

MR. STEIN: And because of the discharge from the low strata, is it your judgment that the oxygen is a little less and depleted with that kind of water?

MR. TRAINA: Oh, yes, the data collected in 1962 indicated a depleted dissolved oxygen below Allatoona.

MR. STEIN: Thank you.

MR. HOWARD: I would like to ask for a comment from the Georgia Power Company on the December 1967 report. Is there someone that would like to make a comment on this statement? Mr. Tom E. Byerley of Georgia Power.

MR. TOM E. BYERLEY: My name is T. E. Byerley. I am an assistant chief mechanical engineer, Civil and Mechanical Engineering Department of the Georgia Power Company.

I have here a statement that was written for and by Mr. R. S. Albright, who is the chief civil and mechanical engineer who intended to deliver this statement, but who is ill today.

In his absence, I will make the statement. And we would like to comment upon the report of December 1967, and to refine some of the information that is included therein as it pertains to the operation, the output, of the company's Plant Hammond.

Plant Hammond is a steam-electric generating plant located on the Coosa River about 15 miles downstream from Rome, Georgia. At the present time, we have units, Numbers 1, 2 and 3, each with a name-plate rating of 100,000 kilowatts each in operation, making the total present name-plate output rating of the plant 300,000 kilowatts.

Unit Number 4, with a name-plate rating of 500,000 kilowatts, is now under construction and is scheduled for operation in 1970 to carry our utility load.

With the completion of Unit Number 4, the total name-plate rating of the plant will be 800,000 kilowatts.

Now, cooling water from the Coosa River is pumped through this steamplant, through the condensers, and returned to the river. In the process of this condensation, this use as condensing, the temperature of the Coosa is raised.

When existing Units 1, 2 and 3 are all operating at full name-plate rating of 100,000 kilowatts each, the plant requires 444 cubic feet per second (199,500 gpm) of cooling water. This cooling water is used to absorb 1,539,000,000 BTU of heat per hour.

Under the aforementioned operating conditions, and with a river flow of 2000 cubic feet per second, the heated water discharge from the three existing units increases the average temperature of the Coosa River about three and a half degrees Fahrenheit as reported in the report.

It should be noted at this point that in 1964 our company modified discharge-water facilities at Plant Hammond to insure thorough and complete mixing.

The tests that have been conducted confirm that the mixing facility is performing satisfactorily. Now, in 1966 the company installed recording thermometers at several locations along the Coosa River, both upstream and downstream from the plant, to determine the actual river water temperatures resulting from the heated water discharge from the existing plant.

Now, examination of the data to date, which has been collected over a period of several months under different regimes, indicates that approximately 2600 to 3000 feet downstream from the plant, the river water temperature is well mixed, homogeneous, and there is little, if any elevation in the water temperature that is detectable due to the plant operation on our recorders.

In other words, the heat that is added to the river by existing Plant Hammond has essentially been absorbed or dissipated within a distance of less than a mile downstream, according to our present information.

As mentioned previously unit #4 with a name-plate rating of 500,000 kilowatts is now under construction with an initial operation scheduled for 1970. When operating in full name-plate rating of 500,000 kilowatts, Unit Number 4 will require 404 cubic feet per second (181,000 gpm) of cooling water and this will be required to absorb 2,368,000,000 British thermal units per hour of heat from the Unit 4 condensers.

Thus, in 1970, when Units 1, 2, 3 and 4 are all operating at full name-plate rating, totaling 800,000 kilowatts, a total of 848 cubic feet per second (380,500 gpm) of cooling water will be required to absorb 3,907,000,000 BTU per hour of heat from the condensed steam.

Under the aforementioned operating condition, and with a river flow of 2000 cubic feet per second, the heated water discharge from all four units will increase the average temperature of the river about nine degrees Fahrenheit after thorough mixing.

Water quality standard, adopted in 1967 by the Georgia Water Quality Control Board permits an overall temperature rise of ten degrees Fahrenheit after mixing, as we understand.

When all four units are operating at full name-plate rating, the allowable ten-degrees-Fahrenheit rise will not be exceeded when the river flow is 1800 cubic feet per second or more.

Now, the Federal Water Pollution Control Administration report states, in the middle of Page 7, as our copy reads, that a minimum of 2680 cubic feet per second flow will be required to meet the ten-degree-Fahrenheit water quality standard.

We draw your attention to a paragraph in the report, Page 7, as we have it. For ready reference, the first two sentences on Page 7 are as follows: ". . .cooling water requirements for powerplants are about five million gallons per hour per 100,000 kilowatts. (6)

"This indicates that, when the full capacity of the plant is being used for power generation, approximately 1490 cubic feet per second of cooling water will be required at Plant Hammond after the expansion."

The above figures quoted from the report are much too high and do not apply to the existing or future units at Plant Hammond. The correct quantities for Plant Hammond are as follows: For Units 1, 2 and 3, the cooling water requirement is 3,990,000 gallons per hour per 100,000 kilowatts, instead of 5,000,000 gph as stated in the report.

For Unit 4, the cooling water requirements will be 2,172,000 gallons per hour per 100,000 kilowatts, instead of 5,000,000 gph as stated in the report.

Thus, for Units 1, 2, 3 and 4, the total cooling water requirement will be 848 cubic feet per second, instead of 1490 cubic feet per second, as stated in the report.

Attention is invited to Page 9 of the report, Recommendation Number 1, which reads as follows:

> "1. The total flow in the Coosa River at Mayo's Bar during the warm-weather months shall be not less than the following: June, 1950 cfs; July, 2400 cfs; August, 2300 cfs; September, 2150 cfs; October, 1600 cfs. Any flows which are less than these levels should be supplemented by the necessary amount after present waste treatment plans are completed."

Now, with the exception of the month of October, where 1600 cfs minimum flow is indicated, the above recommended minimum flows will provide adequate cooling water for all four units at expanded Plant Hammond, since a flow of only 1800 cfs is required to limit the river temperature rise to the allowable ten degrees Fahrenheit.

Attention is also directed to Page 9 of the report, Recommendation Number 4, which reads as follows:

> "4. Georgia Power Company should install heat dissipation devices at the Plant Hammond facility or take other equivalent measures to remove the heat load generated by the proposed increase in power capacity. Georgia Power Company should also provide for effective diffusion of the cooling water discharge to insure complete mixing and so that the effluent does not contribute to a stratified condition in the river."

With reference to the second sentence of Recommendation 4 just quoted, the cooling water discharge from existing Units 1, 2 and 3 is now being diffused to assure thorough mixing with the river.

Similar diffusion facilities will be provided for Unit 4. The first sentence of Recommendation 4 just quoted would require the company to install "heat dissipation devices" or take "other equivalent measures" to remove the heat load generated by the new Unit 4 addition.

The foregoing appears to be inconsistent with the statements contained in the report at the bottom of Page 7, and near the middle of Page 8, which are as follows:

> "There are two alternatives to the control of the temperature problem resulting from the expansion of the Georgia Power Company plant.
>
> "The first is to supply additional augmentation to guarantee a minimum low flow in the Coosa River of 2680 cfs to adequately dilute the additional heat load... The other alternative is the installation of heat dissipation devices at Plant Hammond to remove the additional heat load caused by expansion of the generating capacity from the cooling water before discharge to the Coosa River.
>
> "This will insure that the water temperature increase in the Coosa River will not exceed ten degrees Fahrenheit during the minimum low flow month of October."

Now, the above-quoted statements provide for consideration of alternate measures to correct the temperature problem, whereas no alternate measures are considered in Recommendation 4 on Page 9 of the report.

As stated previously, a flow of only 1800 cfs will be adequate to limit the river water temperature increase to ten degrees Fahrenheit with all four units operating at full name-plate rating.

The report makes no statement regarding the capital investment required to install "heat dissipation devices" and makes no statement regarding the annual cost for operation and maintenance of such "devices" or "measures".

Since the price paid by the company's customers for electric service is directly related to the cost of generation, these economic considerations cannot be disregarded.

In conclusion, the Georgia Power Company is vitally interested in improving the quality of the Coosa River, and is willing to cooperate fully with all regulatory agencies and all water users to achieve this important goal. Thank you.

MR. HOWARD: Thank you.

MR. STEIN: Thank you. Are there any comments?

MR. HOWARD: I would like to comment, Mr. Byerley. This may be a philosophy that we have, but we do not permit a ten-degree rise, you know. You might think you have a license to do this, but we stipulated "must not exceed ten degrees," and we expect all polluters to supply a reasonable control measure regardless of the standard.

That's our Georgia philosophy.

MR. STEIN: Are there any other comments or questions?

MR. HOWARD: I would like to ask Mr. Byerley if the Interior, and the Corps of Engineers and the Southeastern Power Administration agree about some method of flow augmentation, whether or not they would be willing in some way to participate in that, -- if we all decide that is the answer -- just what would be your position on that, or Georgia Power's?

MR. BYERLEY: Well, it would appear from the Federal Water Pollution Control Administration report dated December 1967, that it is desirable to augment the flows of the Coosa River by releasing water from Allatoona Reservoir and perhaps by the Carters Reservoir.

According to our calculations if the flows are augmented to obtain these recommended minimums, including 1800 cfs for October, then the expansion of Plant Hammond would result in heated water discharges within the state's ten-degree rise, temperature rise criteria. The company would welcome a detailed description of the proposed method of augmentation together with a proposed adjustment for electricity generated during off-peak periods.

The company would be willing to participate in such a scheme to augment Coosa River flows and will give prompt consideration for any written proposal forthcoming.

We would like to stress that we are not willing to assume the responsibility for the deciding of when or how water is to be released from storage.

MR. HOWARD: Thank you.

MR. STEIN: Are there any other comments or questions? Because I didn't prepare it, perhaps, I looked at that Federal report in a different way. However, they are here to speak for themselves.

I think they did arrive at alternatives, but in their conclusion they plugged for one. I am not sure that this is unusual -- that they expect this to come out. As I read your statement, I don't find a fundamental difference, although there may be a difference of philosophy with respect to the report or the approach.

Now, either the diffusers are adequate or not, or the temperature readings are right or they are not. This is a question of fact. Now, if there is any disagreement on these facts, I think that you should try to solve it.

There should be no difficulty in getting together with the state and Federal people, setting up a methodology of measuring temperature, because temperature is something that hopefully we can all agree on, and make a determination whether it's adequate or not or precisely what the temperature is or whether the diffusers are adequate now, or they could be placed better. I think the ground rules can set well in advance.

You, the state and we can agree, as the results come out, because we are dealing with physical facts which are really capable of measurement when we are dealing with temperature.

I don't see any problem there. And I think maybe some of your figures are probably more refined than some of the estimates that they may have had. Maybe this is one of the advantages of these conferences, because we do get these refined figures.

I know it is very difficult, no matter how long you have a technical committee working, sometimes to get these out unless you have a meeting of this type.

Again, I want to try this, because this hits you most, this proposition Number 4 about Georgia Power Company's installing heat dissipation devices and effective diffusion.

Do you have heat dissipation? You certainly have diffusion. Do you have any colling devices in your plant at all? Or do you just let it run out?

MR. BYERLEY: You're speaking here of a cooling tower or a cooling pond?

MR. STEIN: A cooling device --

MR. BYERLEY: We do not have either a cooling pond or cooling tower presently installed.

MR. STEIN: I'm just trying to take an approach so that we can work together. I am wearing the hat of a draftsman here and am not speaking for the conferees.

Could we take the approach that Georgia Power Company, in conjunction with the Georgia Water Pollution Control Board and the Federal Water Pollution Control Administration, will meet the standards adopted for the interstate waters of the Coosa River by the Georgia Water Quality Control Board and the Department of the Interior as it affects temperature control. This will, of course, include the implementation plan, and all necessary measures will be taken to install devices to meet these requirements?

Now, if it turns out that you do not have to do anything, that is fine. But if you do, this, presumably is the approach and this is again only a judgment. As far as temperature, there should not be any disagreement on it. And this may give us a method of moving ahead, because I am not sure that the states or the Federal Government could ask for any less than compliance with the law and the standards that we have both adopted.

MR. HOWARD: Well, Mr. Chairman, we may have to modify our temperature requirements on industry if we are not meeting the requirements of four milligrams per liter of oxygen at the state line.

If we determine that we need to do a number of things--it may be more advance treatment; maybe it revolves around the temperature--we have to go into that study. We might even think that the Georgia Power Company might be thinking about a mixing zone of two miles or one-half a mile or 100 yards. We're not sure yet.

We have to refine all of this and find out what the answers are.

MR. STEIN: That is right. But that will meet your implementation plan - if they did that.

MR. HOWARD: If they did that. But if they expand and they're not meeting the criteria as they exist now, we'll have to reexamine the whole thing.

MR. THOMAN: Mr. Byerley, I don't want to take exception to your statement, because you did present some very valuable information. I have two things.

One of them, I think, Mr. Howard brought out, and that is that quite naturally, you were looking at just the heat the Georgia Power puts in and didn't take a look at its effects on other wastes, oxygen-demanding materials that are dumped into the river.

The second thing is that -- I do have a question -- if we agree that your data are correct, and I think we will have to assume this, what would the maximum temperatures be that you would expect to produce with that cooling water?

MR. BYERLEY: The maximum?

MR. THOMAN: The maximum temperatures? Assuming that you take the old ten-degree rise permitted by the Georgia water quality standards, what would be the maximum temperature in the river?

Would it exceed the maximum allowable by the Georgia Water Quality Board?

MR. BYERLEY: Well, gentlemen, we have no control over the temperature coming to our plant, and if we increase it, we use a nine- or ten-degree rise.

MR. THOMAN: But the Georgia water quality control standards, Mr. Byerley, have two things in them. One of these is a ten-degree rise with an absolute maximum of 93 degrees Fahrenheit.

MR. BYERLEY: Yes, sir.

MR. HOWARD: It's 93.2.

MR. THOMAN: I wonder if you have looked at the increase versus the maximum allowable temperature?

MR. BYERLEY: Yes, I think we have to, and we would have to abide by the law, the rules and the regulations of the Georgia Water Quality Control Board, and this would be our intention.

MR. STEIN: But as I understand Mr. Howard's statement before, the point is that he does not consider his 93.2 maximum as a hunting license for everyone to achieve. (Laughter)

This is a maximum that he is going to permit reluctantly if he has to, but he is going to keep it as much lower than that as he can do reasonably. Now, I think this is what --

MR. HOWARD: We start hollering real loud when it gets around 93 and approaches that.

MR. STEIN: I do think, again, and let me try to put this together, with your group in dealing with a complicated situation as we are dealing with in the Coosa -- and I think your industry is a part of this, as any other -- we have several factors to handle.

One is the treatment in municipal-industrial waste, and hopefully we are going to ask these people, and they have been asked, to do what we think is reasonable.

I hope by this time they think it is reasonable, although I don't think in 1963 they did think it was reasonable. It is always a shock when you first hear what you have to do.

The second thing that may be called for is the release of water to maintain minimum low flows.

The third thing we may have to do is to ask for a control of the temperature by the power industry in particular.

What I'm suggesting, with the kind of report that you have put out and the requirements, both of the river and Mr. Howard and the Federal people, I really don't think we are very far apart on that temperature control, and we can arrive at an accommodation.

I don't look for -- it doesn't seem to me that we have any insurmountable difficulties here in dealing with this problem unless I am grossly mistaken on what I have heard in this statement.

MR. HOWARD: This is something that Mr. Starling has passed along to me. At 1600 cfs, the temperature rise would be 10.8 degrees at full load, which would mean 82.2 normal stream temperature.

You're talking about expansion?

MR. STARLING: Yes.

MR. HOWARD: We have seen no evidence that normal temperature would reach this figure so far.

MR. STEIN: Right.

MR. HOWARD: We have a lot of data, really.

MR. STEIN: Let me again make this as an approach, and I wish you would all note this. I think we shall all push this back and forth with each other - in other words, if we are going to ask for the ultimate that you possibly could get in municipal and industrial waste treatment maybe we won't need these releases, maybe we wouldn't need the heat load. If we can ask for the ultimate in water releases from the reservoirs we wouldn't ask either industry or you, or if we would ask you to put the water in - maybe we heard about Mr. Wigglesworth's cooling the water -- instead of asking you for a ten-degree rise, maybe we could ask you for a 20-degree drop and saturated with oxygen, and putting it in, and then the industry and the reservoirs would have to do less, and I think, what I'm doing is setting up these extremes.

I think the approach we have to take in what we are trying to do is be equitable, in other words ask everyone to contribute and make a fairly reasonable contribution.

I won't say it is minimal, because I recognize it is going to cost money both in capital investment and in operating cost; but we are trying to spread it around among the cities and industries, the power companies, the reservoirs.

Now, I think if we can all arrive at an accommodation like that, we will be better off. But what this is going to take is cooperation and give and take on all sides, that we come up with this, because I think you're going to get a benefit.

I say this for all of you individually, and not the very long run either, in the very short run, by cooperating and doing what is best, best for all the groups, because I am sure if we take any one of these alternatives and really put the wood on anyone, we can make them take a larger share and you do less.

MR. BYERLEY: I want to repeat the last statement that we made on the report. "Georgia Power Company is going to cooperate fully with all regulatory agencies and all water users to achieve this important goal.

Now the details of how this cooperation works, we are working with Mr. Howard and his staff, and will continue to work with them.

MR. STEIN: The trouble is, I read the rest of your statement before you made that last remark. You know, that sounds like E. M. Forster when he talked about those Beethoven symphonies.

He says, first he turns the hobgoblins loose, and then at the end, you get a real fanfare of flourish of victory and happiness, and you know it always ends in a happy note, but the hobgoblins have been turned loose for four movements, and you don't forget them. (Laughter)

MR. HOWARD: Thank you very much. Mr. Chairman, I would like to call on Mr. William Ebersole, Vice-President of, and General Manager of Manufacturing, Georgia Kraft Division of Mead Corporation.

Mr. Ebersole would like to come forward and make a statement.

MR. WILLIAM EBERSOLE: Mr. Chairman, conferees, ladies and gentlemen: My name is William Ebersole. I am Vice-President and General Manager of Manufacturing at Georgia Kraft Company.

We welcome the opportunity to present a statement of the company's position to this meeting of the Federal conference on the Coosa River.

The positive attitude and significant contribution of Georgia Kraft Company toward resolving the water quality problems on the Coosa have been well documented in the past.

For this reason, we will not reiterate all of these details on this occasion. There are, however, certain aspects of the company's position which are relative and pertinent to the subject under discussion here today. I would like to review these points briefly.

At the time of the conference hearing at Rome, Georgia, on August 27, 1963, Georgia Kraft Company presented a complete and documented statement relating in detail the enormous and drastic changes in the character of the Coosa River which had resulted from the combined effects of the impoundment of the waters behind Weiss Dam and the cyclic flow from the peaking power generation dam at Allatoona.

Presented at the same time was a complete description and explanation of the work completed, or then under way, by Georgia Kraft Company to cope with the problems caused by these changes in the river's character.

One of the agreed conclusions and recommendations of the original conference was to name a technical committee to study the water quality problems within the basin and to determine equitable solutions to the situation.

This group was further charged specifically to investigate "the effects of discharges from Federal and private impoundments on the water quality of the Coosa River."

At the first meeting of the technical committee, a subcommittee composed of highly competent technical persons was appointed and charged with investigating alternative means, including flow augmentation, to reach and maintain the desired water quality parameters on the Coosa River.

The basic objective of this group was to determine equitable means of protecting the waters of the Coosa while permitting a reasonable level of use by the residents of the valley.

Subsequent to the 1963 meeting of this conference and in recognition that each user must play its appropriate role in protecting the quality of the waters of the Coosa River, Georgia Kraft Company has made additional investments in pollution control facilities both in terms of in-plant changes to reduce the quantity of discharge, and external treatment facilities to improve the quality of the discharge.

In fact, since the beginning of its operation in 1954, Georgia Kraft Company has invested more than $4.5 million, capital dollars, for waste reduction, control and treatment facilities.

More than $1 million dollars has been spent to operate the external waste treatment facilities. It is significant to note that in 1967 it cost more than $273,000 to operate these facilities.

In total, the expenditures by Georgia Kraft Company to protect the water resources of the Coosa River is now in excess of $5,500,000.

Georgia Kraft Company has maintained continuous surveillance of the quality parameters of the river from prior to plant installation at Rome.

Because of the drastic changes in the character of the river, the company initiated new efforts to study and research the interactions caused primarily by the closure of the Weiss impoundment and cyclic flow from Allatoona.

This intensified program of research included special studies by competent consultants such as Dr. Peter Krenkel, Professor of Sanitary Engineering at Vanderbilt University, and Dr. Robert Ingols of the Georgia Institute of Technology.

Based upon these studies, in September 1964, the company submitted a supplement to its original statement for consideration by the subcommittee.

To further assure the availability of reliable and complete information on the river, the company has cooperated financially with the U. S. Geological Survey, the Federal Water Pollution Control Administration and the Georgia Water Quality Control Commission to establish and maintain electronic monitoring devices at the Georgia-Alabama state line and at Mayo's Bar for continuous surveillance of the water quality parameters of the river.

From all these sources, the technical personnel of Georgia Kraft Company have compiled an enormous quantity of information about the river which has been made available to the technical committee and subcommittee of this conference.

It is with this background information that our specialized technical personnel have reviewed the recommendations for flow augmentation proposed by the Federal Water Pollution Control Administration.

In addition to our own analysis, we have had Dr. Krenkel make an independent analysis of the proposal. These analyses fully confirm the need for flow augmentation to reduce the extreme impact resulting from the curtailment of flows at Allatoona Dam.

We fully concur with and support the technical aspects of the Administration proposal as they relate to existing river conditions and we strongly urge this conference to accept and adopt the recommendations of this proposal.

We hasten to point out, however, that the recommendations of this proposal are aimed at resolving the quality problems now existing on the river as determined by research and study conducted during 1963.

Developments now in progress within the basin, such as the construction and closure of Carters Dam, have the potential of imposing still further changes upon the regimen of the Coosa River.

These changes are not beyond resolution within the scope of current technology. To prevent deterioration of the river's vitality, however, a continuing program of sound water management is essential.

It is our opinion that since 1963 the States of Georgia and Alabama have been adequately equipped in terms of organization, personnel and supportive legislation to provide the administrative and technological control for the water management programs necessary to maintain the desired water quality parameters established for the Coosa River.

In summary, we firmly believe that Georgia Kraft Company has fulfilled its appropriate share of the obligations to resolve the water quality problems on the Coosa River.

With acceptance and adoption of the proposal under consideration here today, the objectives determined for this conference will have been achieved.

Therefore, we respectfully suggest that, upon such acceptance and adoption, this conference be adjourned and future administration of the necessary water management program for the Coosa River be vested with the appropriate state agencies.

In closing, we wish to commend the staffs of the Federal Water Pollution Control Administration, the Georgia Water Control Board and the Alabama Water Improvement Commission for their outstanding contirbutions toward fulfilling the objectives established for the Coosa Conference. Thank you.

MR. STEIN: Thank you, Mr. Ebersole. Are there any comments or questions? I think you have made a very constructive and sophisticated statement. I think it is apparent by now that we may have one problem.

One of the things I love to do in these cases is disengage and turn this over to the state agencies, particularly states such as we have in Alabama and Georgia, with their excellent staffs, as you have pointed out, I think possibly that is the philosophic view of a lot of people down here. If we had the kind of agreement and unamimity that the state and Federal people appear to have on the facts and the approaches as we have with your company, I am sure we would be able to give you your wish and probably adjourn the conference.

However, with some of the questions raised by your brother industries down here, I am not quite so sure now that we are going to be that lucky. I would say that the day that we can get all of industry to come in with a statement like yours, we will be glad to leave.

MR. EBERSOLE: Perhaps the agreement can be on methodology, which can then be worked out on the basis of fact.

MR. STEIN: We hope so, but again, until we lay this to rest, we have an obligation to stay with it. Let me give you the way we have been in other cases like this. Of course, probably Georgia Kraft is sophisticated in its business, because they have been involved in water pollution control probably much more intensively and longer than some of the others, but if we ever get the kind of statement that we have gotten from Mr. Ebersole from the communities and the citizens here, as far as the Federal Government is concerned, we are delighted to zip up our briefcases and go home.

If we can get that unanimity from the other industries, other industries down here, and SEPA, etc. -- if everyone would make the kind of statement you just made, sir, I would think this could well be left to the states. However, I think the record will show that really that has not been forthcoming here yet.

I had hoped that we could have disengaged, but we appear to have a little more work to do.

MR. HOWARD: Thank you, Mr. Ebersole.

MR. CROCKETT: Mr. Ebersole, I was extremely interested in the figures you quoted, your company's investment in waste treatment, internal and external.

Do I recall correctly that your total cost in internal and external waste treatment is now $5.5 million?

MR. EBERSOLE: Yes, sir.

MR. CROCKETT: How much of that is in external?

MR. EBERSOLE: I don't have a breakdown on that here at this period?

MR. CROCKETT: Another question: What is the average efficiency of your external waste treatment system?

MR. EBERSOLE: Our external treatment system can be calculated at 70 percent B.O.D. removal. I would like to add, that is the minimum requirement.

MR. CROCKETT: Do you have any figures on what it will cost your company to increase this efficiency to, let's say, 80 percent?

MR. EBERSOLE: We have made some estimate of that, sir, and it appears that it would, the capital outlay, would be $750,000 to $1 million. This, I will remind you, was made several years ago with an annual operating expense, additional expense, of around $125,000 for a 15-percent additional increase in B.O.D. removal.

MR. CROCKETT: Thank you.

MR. STEIN: Mr. Howard?

MR. HOWARD: That's all.

MR. STEIN: I would like to say one thing more, and this I think you can appreciate: As far as Georgia Kraft is concerned, we have always had a full exchange of information with them in data, both ways. I think in dealing with any pollution situation or any time you're dealing with a regulatory agency, such as you face with the states and the Federal Government, I am firmly convinced that while you have some difficult problems, these are materially eased in terms of operation in coming up to solution when we have a full exchange of information.

I think there is no substitute for that, and I think the experience we have had with Georgia Kraft has shown that we have been able to work our way through on some very, very difficult problems.

We maintain amicable relationships, and there has been just one clue to that -- that anything we have in this field is open to Georgia Kraft and, as far as anything we have asked them, the files have been open to us.

MR. CROCKETT: You have agreed, Mr. Ebersole, with the report of the Federal Water Pollution Control Administration and its recommendations for augmentation of flow as being necessary in order to meet the water quality criteria adopted, set up, by this conference.

We will assume from that that you need, your company needs, this augmented flow in order to meet these criteria.

The question was asked of Georgia Power Company if they would consider participation in the cost of augmented flow.

I would like to ask if your company would also consider and participate in the cost of augmented flow?

MR. EBERSOLE: I believe I made the statement that we feel we have made a fair and appropriate share in the resolution of the Coosa River problem. (See also supplemental materials, p. 165).

MR. STEIN: Thank you.

Let's take a short break at this point, because we want to change a tape.

(Short recess was taken)

MR. STEIN: Let's get started, because we hope to push on through and have you out of here before too long if we possibly can make it. At least we are going to make a valiant effort. Mr. Howard?

MR. HOWARD: I would like to ask if Mr. Charles Doss, President of the Rome Area Chamber of Commerce is here and would like to make a statement?

MR. CHARLES E. DOSS: Mr. Chairman, ladies and gentlemen: I am Charles Doss, representing the Rome Area Chamber of Commerce.

I might say, Mr. Chairman, that our statement is based on the published report assuming all the facts are accurate.

We of the Rome Area Chamber of Commerce welcome the opportunity to appear here and state our position relative to the proposals for flow augmentation under consideration.

Here in the Rome Area, we are sincerely concerned with the sound management of our water resources. Our concern is founded on the premise that sound management of this vital resource must provide for multiple use, for not only must we have adequate supplies of quality drinking water, we must also have sufficient quantities and qualities to provide water for our growing industrial complex and to satisfy the recreational needs of our growing population.

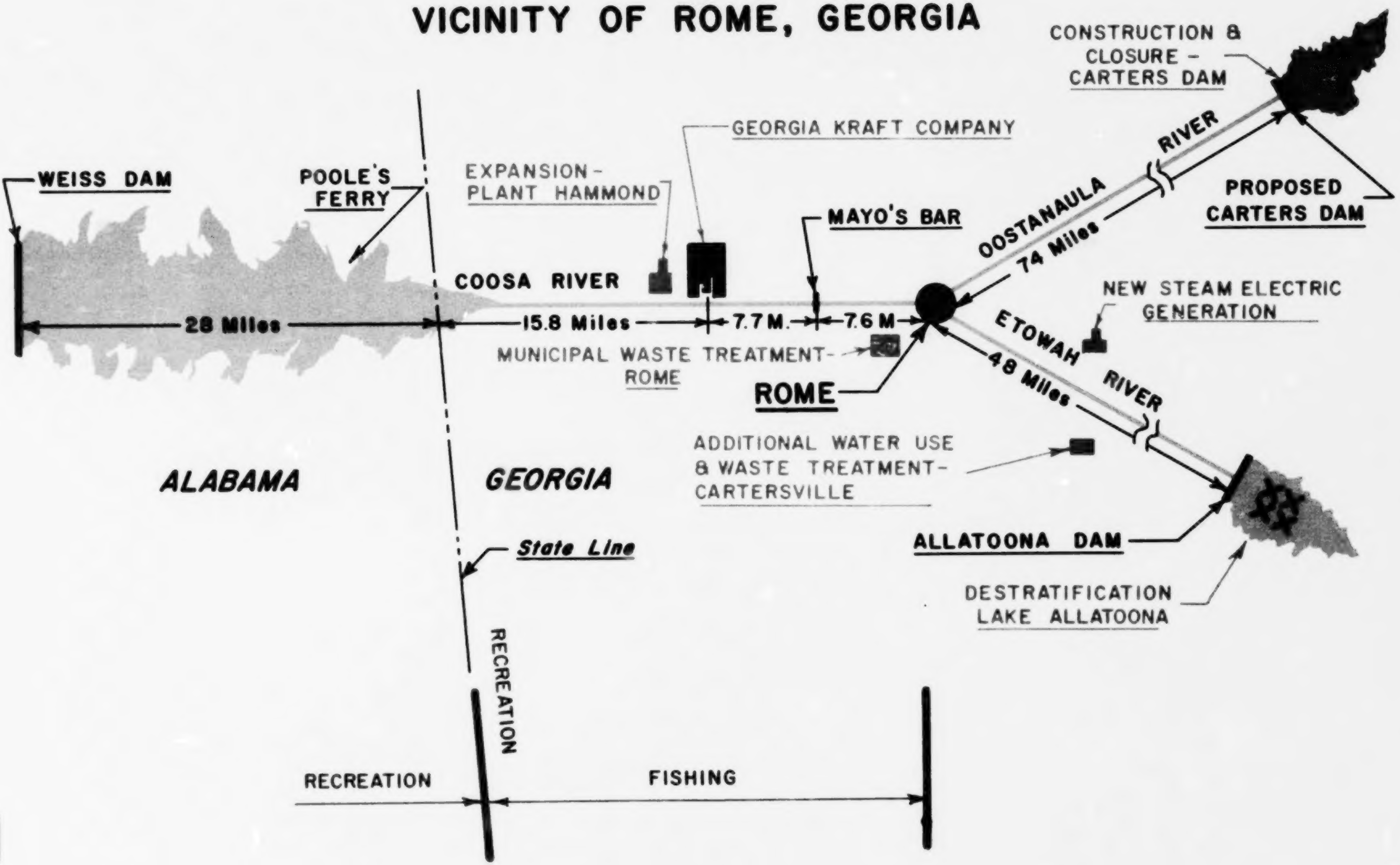
While we do not possess the technical skills necessary to determine the degree or quantity of flow augmentation necessary, we are fully cognizant of the importance of the concept of flow augmentation as it relates to the maintenance of sound water management for this area.

If we are to maintain our necessary rate of industrial and economic development, each and every use must be coordinated and the entire resources must be properly managed.

To summarize, we of the Rome Area Chamber of Commerce concur with the concept of flow augmentation proposed by the Federal Water Pollution Control Administration and urge its acceptance and adoption as a legitimate use of water in keeping with the concepts of sound water management.

DEVELOPMENTS NOW IN PROGRESS
1968
COOSA VALLEY

COOSA RIVER SYSTEM
IN
VICINITY OF ROME, GEORGIA


CONSTRUCTION &
CLOSURE -
CARTERS DAM
GEORGIA KRAFT COMPANY
WEISS DAM
POOLE'S
FERRY
EXPANSION -
PLANT HAMMOND
MAYO'S BAR
OOSTANAULA
RIVER
PROPOSED
CARTERS DAM
74 Miles
COOSA RIVER
NEW STEAM ELECTRIC
GENERATION
28 Miles
15.8 Miles
7.7 M.
7.6 M
ETOWAH
RIVER
48 Miles
MUNICIPAL WASTE TREATMENT -
ROME
ROME
ADDITIONAL WATER USE
& WASTE TREATMENT -
CARTERSVILLE
ALABAMA
GEORGIA
ALLATOONA DAM
State Line
DESTRATIFICATION
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RECREATION
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We would also like to take this opportunity to commend the Administration staff, the staffs of the Georgia Water Quality Control Commission and the Alabama Water Improvement Commission for what we believe to be a feasible solution to the problems which have developed out of the uncoordinated use of the waters of the Coosa River. Thank you.

MR. STEIN: Are there any comments or questions? If not, thank you very much for your statement.

MR. HOWARD: Is Mr. Vaudry Sartin here representing the Rome-Floyd County Development Authority?

MR. VAUDRY SARTIN: Mr. Chairman, ladies and gentlemen, I am Vaudry Sartin, Vice-Chairman of the Rome-Floyd County Development Authority. We appreciate very much the opportunity to present a statement of our position for the record of this reconvention of the Coosa Conference.

Being concerned with the continued industrial development of Rome and Floyd Counties, we are aware of the need for sound water management for the Coosa River.

For this reason, we are sincerely interested in the proposals offered here today by the Federal Water Pollution Control Administration. We have had an opportunity, since the calling of this reconvention, to review and study this proposal.

Based upon this review, we wish to state our support for the concept of flow augmentation. In our opinion, the augmentation of flow in the Coosa River is essential if we in this valley are to continue to grow industrially, socially and economically.

In closing, I wish to commend the efforts of the conferees to determine practical solutions to the quality problems with the waters of the Coosa River and especially as they relate to the Rome-Floyd County area.

MR. HOWARD: Thank you.

MR. STEIN: Thank you very much. Are there any comments or questions? If not, thank you very much.

MR. HOWARD: Mr. Orton, representing the Coosa Valley Area Planning and Development Commission.

MR. DICK ORTON: I am Dick Orton, Executive Director of the Coosa Valley Area Planning and Development Commission. On behalf of the Coosa Valley Area Planning and Development Commission, I wish to thank you for the opportunity to appear here today and to enter into the record of this reconvention of the Coosa Conference our position with regard to the waters of the Coosa River.

As stated on other occasions, it is the policy of our commission to give full support of the work and efforts of the Georgia Water Quality Control Board and to other efforts directed to the conservation of our valuable natural resources.

By definition, conservation means "wise use", and it is our belief that only by way of resource management founded in our sound technology can we assure the continued and necessary development of this valley.

It is our judgment that the concept of flow augmentation in the Coosa Valley is in accord with this policy. For this reason, we wish to lend our unqualified support and urge that this conference accept and adopt proposals regarding flow augmentation.

We also wish to commend the Administration and the technical staffs of the Georgia and Alabama water quality control agencies for what we believe to be sound and responsible recommendations which will add substantially in our continuing efforts to develop this valley. Thank you.

MR. HOWARD: Thank you.

MR. STEIN: Are there any other comments or questions? If not, thank you very much.

MR. HOWARD: That concludes our presentation.

MR. STEIN: We will now call the State of Alabama. Mr. Crockett.

MR. CROCKETT: Mr. Chairman, we do not have any formal statement to present on behalf of the Alabama Water Improvement Commission. We do want to take this opportunity to publicly commend the Georgia Water Quality Board and the Georgia industries and municipalities in the basin of the Chattooga and Coosa Rivers on the progress being made in water pollution control.

Reports coming to us from citizens, residents along and those using Weiss Lake on Coosa River are that a considerable improvement has been made in the aesthetic qualities of the Coosa River following treatment devices to remove the clays that were once discharged to the Etowah River.

On the Chattooga River, where we reported in 1963 quite a series of fish kills, there have been only a very few reports coming to either us or the State Department of Conservation of fish kills in this particular stream in the last two or three years.

Whether or not these have occurred, we do not know, but generally, in these days and times, most fish kills are reported.

We concur with the recommendations presented by the Federal Water Pollution Control Administration for flow augmentation in the Coosa River in order to maintain and assure the maintenance of the water quality objectives adopted by this conference.

I have only two persons from Alabama who have indicated they desire to make a statement today. The first is Mr. Archie D. Hooper, chief of the Fisheries Section of the Game and Fish Division of the Alabama Department of Conservation.

MR. ARCHIE D. HOOPER: Mr. Chairman, ladies and gentlemen: I appreciate the opportunity to appear before you today to make this statement. As Mr. Crockett said, I am Archie Hooper.

I am employed as Chief of the Fisheries Section of the Game and Fish Division of the Alabama Department of Conservation.

In view of the fact that my organization is responsible for all of the fisheries research and management activities in the public waters of Alabama, I am sure that you can appreciate our concern with the many problems associated with water pollution.

It is my understanding that the Alabama Water Improvement Commission has classified that portion of the Coosa River from Weiss Dam to the Alabama-Georgia state line as fish and wildlife waters.

It is also my understanding that the application of this classification has been approved by the Federal Water Pollution Control Administration.

Of course, this approval was necessary in view of the fact that the Coosa River is an interstate stream. I am sure that you understand, however, that the mere naming of a stream as fish and wildlife waters does little, if anything, to protect the fish population within it.

If the fish population is to be protected, then the fish and wildlife classification must contain criteria such as dissolved oxygen, pH, temperature and others that are adequate for the maintenance of a well-rounded fish population.

Unfortunately, the fish and wildlife classification designed by those states concerned with this stream do not afford this protection. I am primarily concerned about the criteria for dissolved oxygen.

It is my understanding that the Federal Water Pollution Control Administration is also concerned over the fact that the criteria for dissolved oxygen in several state classifications is not adequate to protect the fisheries resources.

For this reason, the specific criteria relating to the dissolved oxygen in the fish and wildlife classification has been exempted from approval in my state by Secretary Udall; and it is my understanding that it is under question in several other states.

In view of this information, I was quite surprised upon reading a news release prepared by the Federal Water Pollution Control Administration regarding this particular conference.

This news release contained a statement that the conference was being reconvened because the study by the Interior Department, Federal Water Pollution Control Administration, had indicated that secondary treatment by itself may not insure the maintenance of the minimum four parts per million of dissolved oxygen.

I realize that this concentration was the goal which was set by this conference on August 27, 1963. However, I think it is safe to say that since the first meeting of this conference, an adequate amount of information has come forward to substantiate the fact that a minimum of five parts per million, rather than four parts per million, of dissolved oxygen is going to be necessary to support a desirable population of fish.

In fact, the United States Department of Interior National Technical Advisory Committee recommended that "for a diversified warm-water biota including game fish, dissolved oxygen concentration should be above five parts per million assuming normal seasonal and daily variations are above this concentration."

In addition to the recommendations of the National Technical Advisory Committee, the literature pertaining to requirements of fish is abundant with statements by fisheries research workers to the effect that a minimum of five parts per million dissolved oxygen is both desirable and necessary for the protection of our warm-water fish populations.

I mentioned previously that a portion of the Coosa River beginning at the Georgia-Alabama state line and continuing southward to the Weiss Dam and powerhouse has been classified as fish and wildlife waters, by our Water Improvement Commission.

However, in view of the fact that this classification as proposed by the states involved would allow the dissolved oxygen concentration to be reduced to four parts per million by the addition of sewage, industrial waste and other wastes, it must be assumed that the classification is not adequate to protect the fisheries resources and that the application of this classification will merely serve to lull the public into a false sense of security.

For this reason, the Game and Fish Division of the Alabama Department of Conservation takes this opportunity to urge the members of this conference to do everything in their power to upgrade the waters of the Coosa River to a point that will be adequate to protect our fisheries resources.

It is our recommendation that low flow augmentation in combination with adequate waste treatment facilities be provided to insure a minimum of five parts per million dissolved oxygen in that portion of the Coosa River classified by the Alabama Water Improvement Commission as fish and wildlife.

Certainly, this action will be necessary to conform with what I understand to be Secretary Udall's latest statement regarding the Department of Interior acceptance of the water quality criteria for dissolved oxygen in the fish and wildlife classification.

If it is impossible to upgrade the waters of the Coosa River to a point where a minimum of five parts per million of dissolved oxygen can be maintained, then the fact that the fisheries resources will not be adequately protected should be recognized; and the waters in question should be reclassified as "agricultural and industrial water supply" or "navigation".

However, this should be done in such a manner -- this should not be done in such a manner as to give any state an unfair advantage in interstate stream classification.

Again, I wish to thank each of you for the opportunity of appearing here today and presenting this statement.

MR. STEIN: Thank you, Mr. Hooper. Are there any comments or questions?

MR. CROCKETT: None.

MR. STEIN: If not, thank you very much.

MR. CROCKETT: Mr. Earl W. Clark, National Director of the Izaak Walton League of America. Mr. Clark is from Birmingham.

MR. EARL W. CLARK: Mr. Chairman, I welcome this opportunity to attend this conference and express how I feel about clean water. My name is Earl Clark. I am from Alabama and represent the Izaak Walton League of America.

As an Alabamian, I am well aware that we have water pollution problems caused by industries within our own state. Some persons attempt to justify this home-grown pollution by the fact that it does provide jobs for Alabamians.

We certainly agree that industry and the resultant jobs are vital to the economy of the area. It seems impossible, in this day of advance technical knowhow, to justify water pollution of our streams, rivers and lakes.

It is my understanding that Alabama is on the receiving end of pollution from Mississippi, Georgia and Florida. Pollution, which lowers water quality and prevents the full utilization and development of a state's aquatic resources and yet contributes nothing to the economy of that state certainly is a drag on the economy of the state.

There is no way this type pollution can be justified. Pollution of waters entering our state not only limit their value of recreation, but also lower the usefulness and attractiveness to industries desiring to locate in Alabama.

I did not come here to discuss what factors are necessary to attract industry or what treatment is needed to purify these waters. I am not qualified to discuss such technical items.

This type of discussion should be left to the experts in their respective fields. The point I am making is that I did not come here as a technician, but more as an informed layman.

I also came to see why a standard of four parts per million dissolved oxygen is being discussed. At public hearings throughout Alabama, I watched our fishery biologists trying desperately to get the Alabama Water Improvement Commission to upgrade the dissolved oxygen concentrations of fish and wildlife waters to a minimum of five parts per million.

It was soon obvious at these hearings that the biologists' pleas were being ignored and plans were being laid by the Commission that would allow even our cleanest streams to become polluted.

Based on some recent fishery literature which I have received, it appears that the Alabama biologists were correct in requesting a minimum of five parts per million oxygen in waters classified for the production of good fish populations.

The 1966-1967 annual report of California Delta Fish and Wildlife Protection Study contained some interesting information about the growth of certain fish, notably the large-mouth bass.

This publication contained the following statement:

> "Juvenile large-mouth bass have also been shown to grow more slowly when dissolved oxygen was below saturation. In these experiments there was a sharp decline in the growth rate between oxygen concentrations of four and five parts per million (21 percent average difference)."

This information was determined by scientific laboratory experiments. Since there is a difference between what occurs in the lab and in nature, the California publication further qualified the results with this statement:

> "In most laboratory experiments, fish do not have to swim against currents and can obtain all the food they want with little effort. In nature, the food supply is

often restricted and fish have to seek and pursue it actively.

"As a result, wild fish must use a higher proportion of their food for maintenance than laboratory fish, so the restrictions on activity caused by the reduced oxygen may be more of a handicap.

"Hence, the growth of wild fish may be retarded more than laboratory fish by oxygen reduction."

Alabama has placed this stream at the state line in a classification that would require water suitable for the production of a well-rounded fish population.

According to qualified fishery biologists, such classifications should contain a minimum of five parts per million dissolved oxygen. Yet, here we are discussing a standard of four parts per million for this interstate river.

Is it going to be four or five? I don't see how it can be below five, and I certainly fail to see what purpose a standard of four parts per million dissolved oxygen would serve.

Of course, suitable waste treatment will cost more money, but clean water is one of the best bargains we'll ever have the opportunity to buy.

MR. STEIN: Thank you, Mr. Clark. Are there any comments?

MR. HOWARD: Yes. I would like to make a comment for the record, Mr. Chairman. Our four-milligrams per liter dissolved oxygen is an absolute minimum requirement.

Our judgment is based on our own surveys that if we have a minimum standard of four milligrams per liter, probably 98 or 99 percent of the time, we will have much higher than four in the stream and probably something more like the mean of six, eight, seven, ten parts per million; so we are not worried about the four milligrams per liter.

Our own experience has shown that we get along fine with that as a minimum standard.

Another comment I would like to make is we have two outstanding biologists on our staff, very capable, and when we set our standards for Georgia waters on temperature and dissolved oxygen and other things, our advice and counsel came from our own game and fish biologists who are very experienced and capable men.

We can find all kinds of quotations and justifications for our standards if we look long enough -- like looking through the Bible and finding an excuse for your sins, you know. (Laughter)

MR. STEIN: Rock, I never knew we had to go to that trouble. (Laughter)

Mr. Thoman?

MR. THOMAN: I just want to reinforce what Mr. Howard said, and that is this business of what I call the theory of the minimum, and it is a minimum condition is rather poorly understood.

We took a look at one or two rivers on the basis of four parts per million occurring at the design flow, which was something that occureed for seven days once in a ten-year period, and if the four parts per million dissolved oxygen is met during that week once in ten years, that the dissolved oxygen will be above five parts per million, something like 96.9 percent of the time.

And I believe that engineers and water quality control administrators are taking the design flow and the minimum into account with this particular thing.

It would be very difficult to estimate what the cost would be in the situation such as the Coosa River and the Weiss Reservoir to produce as a minimum five parts per million for one week every ten years, but in other instances on free-flowing streams, it has been indicated that the capital cost alone would be some 35 to 50 percent more than it would be to produce four parts per million.

MR. STEIN: Are there any other comments or questions? Mr. Crockett?

MR. CROCKETT: The Water Quality Criteria approved by the Water Improvement Commission of Alabama fish and wildlife specifies that a minimum dissolved oxygen concentration of four parts per million -- this is the minimum.

It further goes on to say that the minimum shall apply at any time and in any place as the criteria are to apply under any conditions of flow, not just the ten-year, seven-day low flow, but any condition of flow, any minimum flow, dissolved oxygen of four parts per million must be maintained.

I do not have any figures on what percent of time that a dissolved oxygen concentration is in excess of four parts per million will be in the river, but I would like to say for the record that this is a minimum condition rather than a condition that will be maintained all the time or any significant proportion of time.

MR. STEIN: Are there any other comments from the conferees?

MR. HOWARD: Mr. Chairman, I have a magazine here, published by the Georgia Game and Fish Commission, that shows pictures of folks fishing about eight miles down stream of Rome; one picture shows a catch of 50 pounds of crappie and other fish.

I wish I would subscribe to that, because I went to Mayo's Bar the other day and found about ten boats out there fishing and 50 people fishing around the dam, and they were all having a great time, and the pollution I saw down there was from solid waste, beer cans and soft drink bottles and cans nearly knee high in spots.

MR. STEIN: Let's go off the record for just a minute.

(Discussion off the record.)

MR. STEIN: Let's go on the record again.

MR. CROCKETT: No other person from Alabama has indicated they desire to present a statement today. There are people here from Alabama, and at this time, Mr. Chairman, I would like to ask if any of those would care to make a statement. (Silence)

Apparently not, so this concludes Alabama participation.

MR. STEIN: Well, if there isn't anything else, that will conclude the statements. At least, I think we may be in condition to move ahead with an agreed-upon statement for the conferees.

I think with modifications, I want to tell the conferees, I am going to use, following on 8 and 9 of the report, I had my notes, but I think that is fair--at least indicate the points that should be taken, and I would say that as summary and conclusion Number 1, I would say, "The Georgia Water Quality Control Board is to be commended in carrying out the remedial program agreed upon by the conferees representing Alabama, Georgia and the Federal Government for the abatement of pollution in the Coosa River Drainage Basin since the conference held in 1963.

"However, due to regulated river flow above waste discharges, and impoundment below, four parts per million of dissolved oxygen--a minimum of four parts per million of dissolved oxygen--necessary for the propagation of fish life as required by the Federal Enforcement Conference of August 27, 1963, cannot be maintained in the Coosa River by normal required waste treatment alone."

Is there any --

MR. HOWARD: Maybe we want to qualify "low flow periods."

MR. STEIN: I said, "a minimum number."

MR. HOWARD: We can do it except during the low flow months.

MR. STEIN: "Can't be maintained in the Coosa River during low flow periods" -- let's change that --"during low flow periods by normal required waste treatment alone." All right?

MR. HOWARD: Yes.

MR. STEIN: That's Number 1. Parenthetically, I would like to point out, I have no brief necessarily for the technical operation done in dealing with the minimum required for fish.

I think we have to require this for fish. I think we have a water quality standards procedure under the Act which is going ahead, and they're dealing with this operation.

As far as I can see, and I say this, I hope, objectively, that this notion of four or five is the kind of technical technique to get the conditions in the river which will maintain fish life and create conditions for propagation of fish.

However this is resolved -- and in essence, it is going to have be to be resolved, and it's on its way to being resolved, as you know, by the biological and fishery experts -- I think in the enforcement operation, we have to take the judgment of the due process in the standards-making operation by the state agencies and the Federal agency for the enforcement criteria.

I would say that as far as the enforcement operation is concerned, if we are informed that a technique, that a minimum of four parts per million, say, in a seven-day, ten-year period, or an absolute minimum is going to maintain in those waters at above five all the time, and that's the best way to control it, I think that's the technique we use.

As a matter of fact, from an enforcement point of view, I always prefer a minimum rather than an average because if anything drops below that minimum, you know there is a violation; and in order to maintain that minimum, you're going to be way ahead all the time. At least from the regulatory point of view, any time that these engineers and biologists can come up with a technique like that, I, for one, welcome it.

But I want to point out, I have no brief for that, and if the standards get refined with another technique, this is the technique that is going to be folded in but this is what we have to work with now.

Let's go on to the next one. Two, and I think we will make conclusions and recommendations together. "The total flow"— do you want to put --

MR. THOMAN: Heat pollution.

MR. STEIN: Do you want to have that last sentence in the conclusions: "In addition, there will be an increase in heat pollution, discharge to the river due to enlargement of the Georgia Power Company Plant Hammond installation"?

MR. HOWARD: Yes.

MR. THOMAN: Yes.

MR. CROCKETT: Yes.

MR. STEIN: That is agreeable, and that will stay.

No. 2. "The total flow of Coosa River at Mayo's Bar during the warm-weather months shall not be less than the following: June, 1950 cfs; July, 2400 cfs; August, 2300 cfs; September, 2150 cfs; October, 1600 cfs."

Any action, and I am changing some of the verbs to make this a finding and getting away from the "shoulds" --

MR. HOWARD: Let me ask about that 1600. Did we agree to that? Was there something pointed out by the Georgia Power Company that that figure ought to be 1800?

Did you bring that out in your report, according to their calcualtions, I think we ought to review that figure of 1600.

MR. STEIN: Is there any difference in that figure of 1600?

MR. STARLING: That 1800 was to provide enough flow to allow a temperature rise over ten degrees.

MR. STEIN: As I --

MR. THOMAN: Mr. Stein, Mr. Gallagher informed me that 1600 is the minimum flow necessary for the organic waste discharges; that 1800 would be necessary to take care of the heat.

MR. HOWARD: Shouldn't we put that 1800, then?

MR. STEIN: Yes, go ahead. Mr. Traina?

MR. TRAINA: Sixteen hundred cfs is a figure for a required flow based on present conditons of waste loading and heat.

The 1800 cfs which was referred to was the figure that Georgia Power Company gave, and please correct me if I am wrong, as was the figure that Georgia Power Company gave us as to what they think is required for their proposed expansion of heat of electric generating facilities.

As far as this report is concerned, 1600 cfs is required based on present waste loading and heat loads.

MR. STEIN: That's the way I understand it. This will read "1600 cfs. Any flows which are less than these levels are to be supplemented by the necessary amount" -- what do we need that last -- do you want that last phrase after "present waste treatment plans are completed?"

MR. THOMAN: I don't think that is necessary.

MR. STEIN: Can we put a period after amount? This is going to be a charter for a long time. I think we might have a quibble if you get one small plant -- extra words which might lead to a loophole.

How about putting a period after "amount"?

MR. HOWARD: Okay.

MR. CROCKETT: Mr. Chairman, this reads "total flow". Are we talking about total flow recorded during the day, or are we talking about a continuous rate of flow or minimum rate of flow?

MR. HOWARD: In that last sentence, you're talking about supplementary flow if needed.

MR. STEIN: -- if needed.

MR. CROCKETT: You say, "the total flow of the Coosa River" --

MR. THOMAN: What if this was changed just to read "the flow in the Coosa River"?

MR. STEIN: Would that satisfy this or not?

MR. CROCKETT: Let's put it back to the people who developed this. Are your conclusions -- directed to Mr. Traina -- are your recommendations based on an instantaneous flow?

MR. TRAINA: Yes, that's right. Again, these figures, if you will, the instantaneous flows at any time, they are not supplementary -- this is the total flow required at Mayo's Bar.

That is what we mean by total flow. In other words, it's not incremental flow.

MR. HOWARD: Now, in the last sentence, "any flow" --

MR. TRAINA: "Any flows that are less than these levels are to be supplemented by such amount as to bring them up to the levels indicated."

MR. STARLING: Should that be tied into the temperature?

MR. TRAINA: The analysis incorporated the temperatures. Again, if you will, these figures right here are the flows required based on present waste loads, present heat loads and present temperatures in the Coosa River at Rome.

MR. CROCKETT: I think that you should probably do this -- overcome what I have brought up by just deleting the word "total", --

"The flow in the Coosa River."

MR. HOWARD: Why don't you leave out the last sentence entirely? It doesn't add anything. It's just confusing, isn't it? Let's leave that last sentence out.

"Any flows" -- it is obvious.

MR. STEIN: Is that all right about the last sentence?

MR. THOMAN: I believe you will have to change the first sentence here then.

MR. STEIN: No, you won't. No, you won't.

MR. CROCKETT: I think you're confusing the reporter. I think it would read better if we left the word "total" out.

MR. STEIN: Is that agreeable?

MR. TRAINA: Well --

MR. STEIN: Mr. Howard, let's do one thing at a time. Can we strike the word "total"?

MR. HOWARD: Yes.

MR. STEIN: I think you're right. This raises a technical question. Gentlemen, do you want the second sentence or not?

MR. CROCKETT: One other point -- I don't want to belabor this. Let me read this sentence: "The total flow in the Coosa River," or "The flow in the Coosa River at Mayo's Bar during the warm-weather months, shall not be less than the following."

We are setting a condition here. This is not going to be less than this. Nature plays a part in it to some extent.

MR. HOWARD: That's right. He's talking about maximum temperatures as he understands them now. Actually, in July --

isn't that right -- these were the worst temperatures in July?

MR. TRAINA: The analysis was based on present load and present temperatures, and it's based on 90-percent frequency, and this is the flows required in the Coosa River.

MR. HOWARD: Not the present temperatures, but the maximum temperatures.

MR. TRAINA: That's right.

MR. STEIN: Let me try to do this drafting and try to make -- let's see -- "total flow" -- I'm just trying to draft -- "the present flow in the Coosa River at Mayo's Bar duing the warm-weather months" -- strike out "is not to be less," -- "shall be" -- "is not to be less" --

"Any flows which are less than these levels are to be supplemented by the necessary amount." In other words, this will get around -- we will have to use that second sentence to get around the sematic difficulty.

We will say it is not to be less, and if it's less, we are going to supplement it by an amount.

MR. HOWARD: I could split another hair, but I won't do it. (Laughter)

MR. STEIN: This is always the problem. By the way, let me tell you what we are doing here, and I hope you will bear with us.

Generally, discussions like this are held in executive sessions without the public. We always feel that the public should be in. An executive session generally is reflected by a hard-nosed, hair-splitting drafting session.

There is no other way around it. This is the way they refine and get their ideas here, so just bear with us.

MR. HOWARD: In the public eye, you're always inclined to minimize the nitpicking, isn't that right?

MR. STEIN: Right. You ought to see when we close the doors, how many nits we can find.

MR. CROCKETT: This is the last one. I will suggest this word: "Any flows which are less than the following" -- and then take the "June, 1950 cfs; July, 2400 cfs; etc., are to be supplemented by the necessary amount."

MR. STEIN: All right. "Any flows in the Coosa River at Mayo's Bar" -- all right?

MR. CROCKETT: Right.

MR. STEIN: "Any flow" -- "flows" --

MR. HOWARD: I'm thinking about a very cold August, you know, or July, we might have. I would think that would change the whole thing, right, Charlie?

MR. STEIN: Let me try this before we change anything. "Any flows in the Coosa River at Mayo's Bar during the warm-weather months which are less than the following are to be supplemented -- is to be supplemented -- up to the foregoing level," right?

Is that what you want?

MR. HOWARD: That will take care of the worst conditions.

MR. STEIN: Yes. Let me read that again, and I won't read all the -- "Any flows in the Coosa River at Mayo's Bar during the warm-weather months which are less than the following" -- now we follow that, all those months and so forth -- "is to be supplemented up to the following levels, foregoing levels" --

MR. HOWARD: -- "foregoing levels."

MR. STEIN: Now: -- "to assure adequate supplementary flow to maintain four parts per million of dissolved oxygen after the implementation of the present waste program" --

I don't know that we need this. Can we say "to insure"-- "to insure adequate supplementary flows," and just strike the rest, because we -- "to insure such adequate supplementary flows" -- let's strike the rest of the sentence, two sentences -- we'll say -- "such supplementary flows" --

MR. HOWARD: Why don't we just say: "To maintain four milligrams per liter of dissolved oxygen at the state line after implementation," etc. I like that four milligrams per liter.

MR. STEIN: All right, let's leave it. "To maintain four parts per million" -- let's leave out "the state line" because Alabama has it. "After the implementation of the present waste program," this will follow: "The Secretary of the Interior is asked," and I changed that, "is asked to request the United States Corps of Engineers to provide adequate storage for low flow augmentation to meet the requirements of Number 2 above in either the existing Allatoona Reservoir, or the Carters Reservoir now under construction or the most efficacious combination of both installations."

MR. HOWARD: I would like to add in there, if everybody agrees, that we have in there, "existing Allatoona Reservoir, or the Carters Reservoir or any other water resources projects in the Coosa River System."

Now, I understand that some water resources projects are going to be developed in the future and have been proposed up around Oostanaula and up around Dalton.

MR. STEIN: By the Corps?

MR. HOWARD: By the Corps and other agencies.

MR. THOMAN: Let me just change this just to say "Corps of Engineers to provide the necessary storage for low flow augmentation," because they may or may not be able to provide it from these.

They may have alternatives of providing it some other way.

MR. HOWARD: These that have to be proposed in the future --

MR. STEIN: Let's wait just a minute.

MR. HOWARD: We want to recognize the fact that they are anticipating and initiating those projects.

MR. THOMAN: I would drop any reference to any "existing" --

MR. STEIN: We could work it both ways. What is the feeling of the conferees? Do you want those reservoirs spelled out, or do you want -- we just ask the Corps of Engineers to provide this --

MR. CROCKETT: I think it would be adequate if you asked the Corps of Engineers to provide --

MR. STEIN: Are you in agreement with that? Here is the alternative. Let's try this: "To insure adequate supplementary flows, the Secretary of the Interior is asked to request the United States Corps of Engineers to provide adequate storage for low flow augmentation to meet the requirements in Number 2 above."

MR. HOWARD: We had a suggestion from the Georgia Power Company about taking part in this abatement program in terms of providing -- purchasing low flow augmentation, when there were off peak days -- they would buy whatever generation, take it from Allatoona and that way they would be participating in the program.

Or we might add in here -- "or that Georgia Power Company proceed to provide augmentation" in lieu of heat dissipation.

MR. STEIN: Wouldn't that -- let me ask this, and we want to keep this straight -- wouldn't this probably be a proposal that Georgia Power would work out with the Corps of Engineers?

MR. HOWARD: There have been suggestions that they would participate in that arrangement, so I thought we ought to add them in there, tie them in there to take that suggestion, taking whatever discharge comes from Allatoona during --

MR. THOMAN: Rock, aren't these administrative details that would be worked out later? In other words, these conclusions are, well, very broad premises from which you would then work.

If you try to restrict them to specific items --

MR. HOWARD: I'm not restricting them. I'm saying "or".

MR. STEIN: I'm with you, Rock. Let me -- I'm trying to draft it. I think we can do it with two sentences -- "To insure adequate supplementary flows, the Secretary is asked to request the United States Corps of Engineers to provide adequate storage for such low flow augmentation."

Now, "the Corps of Engineers is to be requested to provide water for such low augmentation by the utilization of their existing or proposed impoundments or by arrangement with the Georiga Power Company, or any other appropriate agency."

All right?

MR. HOWARD: That's all right.

MR. TRAINA: Mr. Chairman.

MR. STEIN: Yes.

MR. TRAINA: If I might just include something here. This requirement, 56,000 acre feet or whatever the figure might be, is based on conditions as of now.

Again, organic waste load and heat load -- the other part of this report talks about the future expansion of Georgia Power, in which we get involved in either heat dissipation devices or additional augmentation.

MR. STEIN: Let me put this into the record. The difficulty here is what we have -- maybe you want to get this off the record - but I have no problem. But the problem we have here, if we are going to do this, and we may very well need legislation, if we are dealing with the Secretary of the Interior, and the Secretary of the Army, and we discussed this with the

Corps men, if we come up with a figure on 56,000 or any other specific figure, I think we are going to inhibit the negotiations.

If we start this on the Secretarial level, from a tactical point of view -- strategic point of view, if you will, broader -- we will get the program moving a lot faster if we don't start out with a figure between the two Secretaries, but we let them agree in principle and let us work that out.

MR. THOMAN: Murray, I would still like to make the point I made before, and that is, leave the first sentence as you originally had it and forget about this Georgia Power thing, because they are tied down in Number 4 on this page.

MR. TRAINA: That was my point. It was not the figure.

MR. THOMAN: It's not the figure. Forget the figure. In other words, the point here is leave the 56,000 -- just leave the first sentence, the Corps of Engineers -- decide where they get this flow from.

MR. HOWARD: Go ahead and strike that.

MR. STEIN: Let me read this again. "To insure adequate supplementary flows to maintain four parts per million of dissolved oxygen after implementation of the present waste treatment program, the Secretary of Interior is asked to request the United States Corps of Engineers to provide adequate storage for low flow augmentation."

That will do this, and we will work this out. Now, let's go to 3. Three becomes 4 now. We are going to 4.

"Allowable five-day B.O.D. waste discharges to the reach of the Coosa River covered by the conference is not to exceed 27,000 pounds per day. When economic expansion of the area occurs, higher percentages of waste removal will be necessary to meet this allowable waste load."

Is this agreeable?

Why do you put "economic"? How about "people"?

MR. HOWARD: I don't know why you put that in there. And I also don't know why you want to say, "the high percentage of waste removal will be necessary."

We might do it some other way.

MR. STEIN: What's wrong with the first sentence as it stands, and strike the second?

MR. THOMAN: Strike the second?

MR. STEIN: Strike the second sentence. The last one will need a little revision. Do you want to get in on this negotiation with Georgia Power or not? (Laughter)

"Georgia Power Company in consultation with the Georgia Water Quality Control Board and the Federal Water Pollution Control Administration shall develop a program to meet the temperature requirements for the Coosa River, for the interstate waters of the Coosa River, incorporated in the water quality standards adopted by the Georgia Water Quality Control Board and the Secretary of the Interior.

"The Georgia Power Company is also to provide for the effective diffusion" (and this doesn't mean that they may not have it already) "of its cooling water discharge to insure complete mixing so that the effluent does not contribute to a stratified condition in the river.

"A report from the Georgia Power Company on its program to achieve these objectives will be submitted to the conferees in six months."

MR. HOWARD: Mr. Chairman, I think that is interference with the state's program. The Georgia Power Company has talked to us in preliminary talks about the expansion.

They haven't given us any plans yet. We haven't gotten down to the fine arguments about what we should do, whether we should put in aerators, evaporative towers or some other device.

I think what we ought to limit this discussion to the existing conditions. Now, if we are going to see what is necessary to meet our requirements for treatment and our control -- I don't think this is now any time for the Federal Water Pollution Control Administration to stick their nose in our business.

MR. STEIN: Now, we can strike "in consultation with Georgia" -- and get a report from you. I don't believe I said anything about future conditions.

MR. HOWARD: This is a talk about proposed expansion in this paragraph.

MR. STEIN: Where is that?

MR. HOWARD: "Heat generated by the proposed increase in power capacity."

MR. STEIN: I didn't say that when I read it, did I? I'm not sure now. No. Let me repeat what I said. I don't think I said that. Let me put it -- let me give you this, if you want to deal with this.

MR. HOWARD: I think what you ought to do is put it like you have got it, "with consultation with the Georgia Water Quality Control Board - and develop the program at the Plant Hammond facility to take other equivalent measures, whatever measures are necessary to remove the heat load generated by the cooling water," and not go into this propose thing again.

MR. STEIN: All right. "Generated by its cooling water discharge?" Right?

MR. HOWARD: Yes.

MR. STEIN: "Cooling water discharge?"

MR. HOWARD: What I'm trying to explain is -- we have a problem with them, and we recognize there is thermal pollution existing now.

MR. STEIN: Right.

MR. HOWARD: They are talking about expanding and we all know that and let us deal with them.

If we can't get them straightened out, then we will call you all in to help us.

MR. STEIN: Wait. Let's get to the second sentence, sir.

MR. HOWARD: This has a relation to other activities going on.

MR. STEIN: I have no objection to this, if Georgia wants to do this, but let me try to get this out. Let me read the first sentence: "Georgia Power Company, in connection with the Georgia Pollution Control Board" - do you want the rest, "to install heat dis..." or do you want to leave that out?

MR. HOWARD: We should "take whatever measures are necessary."

MR. STEIN: "The Georgia Power Company in consultation with the Georgia Water Pollution Control Board is to take whatever measure is necessary at the Plant Hammond facility to remove" --

MR. HOWARD: "To control" --

MR. STEIN: "--control the heat load generated by its cooling water discharge. The Georgia Power Company is also to provide for effective diffusion of its cooling water to insure complete mixing so that the effluent does not contribute to a stratified condition in the river."

Now, do you want to have anything --

MR. HOWARD: Let's call that "Georgia Water Quality Control Board" instead of "water pollution." That's a bad word.

MR. STEIN: I thought I said that. Now, do you -- now, how about "a report from the Georgia Water Quality Control Board to the conferees in six months" on what's happening.

MR. HOWARD: On what's happening about the existing conditions?

MR. STEIN: "On the program."

MR. HOWARD: All right.

MR. STEIN: "The Georgia Water Quality Control Board shall report to the other conferees in six months concerning the program in this area."

MR. HOWARD: Do you hear that, Charlie?

MR. STEIN: We will be around. Now, the next operation, and I had one more note here -- do you want to get into that -- setting up this intensive study business, or do you want to leave this out of here?

This is one you made, Rock, that I had a note -- I am sure that the monitoring is doing as good a job as we can expect. I am not sure that this is going to be adequate.

Do you want to take it up as a conclusion of the conferees, or do you want to leave it out?

MR. HOWARD: We have a feeling that the FWPCA always has a very unobjective study program going on, you see, and we think we are going to have problems in the future on this whole river system up there -- the Oostanaula and the Coosawattee -- and we think sometime either this late summer or next year we ought to have an intensified study of all the factors involved to see what we really need to do to get busy.

Now, we are asking for technical assistance. We holler for it all the time and we can't get it. This is our opportunity to ask for it.

(Discussion off the record.)

MR. STEIN: "A technical committee representing Alabama, Georgia and the Federal Water Pollution Control Administration shall develop plans and a schedule for an intensive survey of the Coosa River System to determine the effect of the water quality management improvements indicated above. A report on, a detailed report, on the requirements of this survey and a time schedule, together with a time schedule, is to be presented to the conferees within six months," then we will adopt it and finance it and be in business.

MR. HOWARD: Fine. The reason we plead for these things, Murray, we have had three conferences, you know.

MR. STARLING: The Coosa River goes all the way to Montgomery.

MR. HOWARD: Will add the upper Coosa River.

MR. STEIN: Yes. The Coosa River, the portion of the Coosa River covered by this conference -- I think we are just dealing with this conference area. Are we set?

MR. HOWARD: We are more worried about population growth and industrial developments for the future.

MR. TRAINA: Mr. Chairman, since I might have an interest here, you indicated that this survey will investigate the effects of the recommendations made above.

MR. STEIN: Not the effects, no, sir. We are placing no limitation to carry this out, and presumably, we are not placing any limitations on the survey.

We would hope that you, Georgia and Alabama would come up and tell us how much you need -- when you need it and how much money you're going to need to do it so we can adopt it and get you moving.

MR. HOWARD: It may be when we get together we may find out we already have that information.

(Discussion off the record.)

MR. STEIN: Do we have any other comments?

MR. P. E. LACOUTURE: Mr. Chairman.

MR. STEIN: Mr. P. E. LaCouture.

MR. LACOUTURE: A question of interpretation. In your Recommendation Number 2, you deleted the words "after present water treatment plants are completed with respect to the minimum flows which will be required".

In the following recommendation, I wondered whether you intended to delete the same language?

MR. STEIN: We did that -- I don't think this is after implementation. This is a broader term.

MR. LACOUTURE: Would there by any hold-up in requesting -- in having the Secretary request the report.

MR. STEIN: I would hope he would do this right away. I don't look for any conflict, because by the time we get all the red tape snipped away, and if we are successful in getting augmented low flows, I would hope Mr. Howard would have his waste treatment at the source working, or else we are going to be in serious trouble, because at the best, in particular, if we need legislation, this is going to take us some time to do.

MR. LACOUTURE: But you don't feel that the inclusion of this language in this paragraph would impede?

MR. STEIN: No, it's not a limitation.

MR. THOMAN: I think the first conclusion also took into account the cognizance of the work that was done and under way.

MR. LACOUTURE: Thank you.

MR. STEIN: I thought of that, Paul, when this thing was raised, and I think when you look at that, they dovetail. Are there any other things you want in here?

MR. HOWARD: I think not.

MR. STEIN: Now, are we going to have to call this again? I guess we are going to have to get together again sometime.

MR. HOWARD: Get together with a technical committee.

MR. STEIN: I don't know whether you want to have a conference, or a progress meeting, or something of that kind, or another session of the conference.

(Discussion off the record.)

MR. STEIN: The conference is to be reconvened on the call of the chairman. Now, is there anything else?

MR. HOWARD: No, I think not.

MR. CROCKETT: What happens to the conclusions and recommendations of the original conference? They are still valid?

MR. STEIN: Yes, sir. And I want to point out to anyone who is not familiar with this -- I guess my legal background is showing -- that four parts per million was agreed on in 1963.

It's been approved by the Secretary. As far as I am concerned, it's binding on us. I can't change it, and I think the only way that can be changed is if the states and the Secretary both change it.

I'm living up to what has been in the record since 1963.

I think perhaps if there are some technical refinements, this will have to be taken up through another source. As I say, we are always glad to improve, and if we get a better way of managing this, I would like to see it, and we'll entertain those methods of looking at it.

Again, let me make this last point. I looked at this controversy of four and five as just a management technique to get at a problem. I don't find any difficulty with four, particularly with the condition of the river.

If we get a four minimum, I would be ready to retire.

Any other comments or questions? Does anyone want to say anything before we adjourn? If not, again I would like to thank you all for coming. I think whether you realize this or not, what you have seen here is a milestone in pollution control.

This is the first case that I know where we have moved beyond the traditional method of asking for more and more and more treatment, and we are trying to hit this on a river basin basis.

I suspect that in the future, many more of the pollution control actions are going to be in the pattern of what you have seen here, rather than on the pattern of what we have seen in the past.

Thank you, again, all for coming and bearing with us and participating. I am looking over the audience, and this is about as sophisticated a water audience as I have seen anywhere, and we stand adjourned.

(Whereupon the meeting adjourned at 12:40 o'clock p.m.)

(The following letter was submitted for the record after the adjournment of the above conference:)

GEORGIA KRAFT COMPANY
ROME, GEORGIA 30161

MILLS AT:
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April 22, 1968

Mr. David Shedroff
Chief Enforcement Officer
Southeastern Region
Federal Water Pollution Control Administration
1421 Peachtree Street, N.E.
Atlanta, Georgia

Dear Mr. Shedroff:

In the course of my presentation of Georgia Kraft Company's statement to the Federal Conference on the Coosa River, held at Rome on April 11, 1968, Mr. Crockett, the conferee for Alabama, asked me whether Georgia Kraft Company would participate in paying the cost of augmented flow in the river. His question came just prior to the coffee-break recess.

My answer was, in substance, that in the statement we had said the Company had fulfilled its appropriate share of the obligations to resolve the water quality problems c he Coosa River.

To avoid any misinterpretatio my answer, I should like to amplify it.

In our statement, we said that the expenditures to date by Georgia Kraft Company to protect the water resources of the Coosa River are in excess of $5,500,000. This figure includes capital costs of more than $4,500,000 and external waste treatment operating expenses of more than $1,000,000. In 1967, the operating expenses exceeded $273,000, and we have no reason to believe that the annual operating costs will decrease in future years.

We believe that, with the large expenditures made by Georgia Kraft Company to date and the substantial annual operating burden assumed by the Company, it has contributed its fair share to protecting the water quality of the Coosa River. We, therefore, do not feel that the Company should contribute to the cost of the augmented flow.

Very truly yours,

W. M. Ebersole

W. M. Ebersole
Vice President and
General Manager of Production

jkb